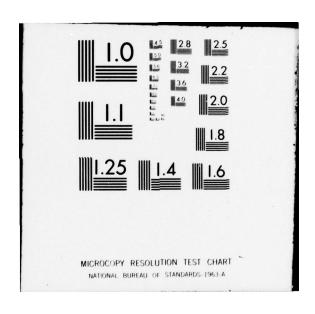
AD-A060 842 SCOTT ENVIRONMENTAL TECHNOLOGY INC PLUMSTEADVILLE PA J57-59W ENGINE EMISSION TEST REPORT. (U) JUL 78 A F SOUZA, H A SCOTT SET-1628-02-1177 CEEDO-TR-78-37 F/6 21/5 F08635-77-C-0216 UNCLASSIFIED CEEDO-TR-78-37 NL OF AD A060842 Marie Marie END OI -79





**J57-59W Engine Emission Test Report** 

SCOTT ENVIRONMENTAL TECHNOLOGY, INCORPORATED PLUMBSTEADVILLE, PENNSYLVANIA 18949

Anthony F Souza Harold A Scott, Ir

**JULY 1978** 



FINAL REPORT FOR PERIOD NOVEMBER 1976-DECEMBER 1977

Approved for public release; distribution unlimited

CEEDO

CIVIL AND ENVIRONMENTAL ENGINEERING DEVELOPMENT OFFICE

(AIR FORCE SYSTEMS COMMAND)
TYNDALL AIR FORCE BASE
|FLORIDA 32403

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J57-59W Particula	te Oxides	of Nitrogen		
20. ABSTRACT (Continue on reverse side if necessary and	d identify by block number)			
The exhaust emissions from three J57-59W water injected turbojet engines were measured. Emission rates of hydrocarbons, carbon monoxide and oxides of nitrogen were calculated. Smoke opacity and particulate loading were also measured. Best estimate emission factors are presented.				

### PREFACE

This report documents work performed during the period November 1976 through December 1977 by Scott Environmental Technology, Inc, Plumbsteadville PA 18949, under Contract FY8952-77-625 with Det 1 Armament Development and Test Center, Air Force Systems Command, Tyndall Air Force Base FL 32403. Lieutenant Harold A. Scott, Det 1 ADTC/ECA, managed the program.

A special thanks is given to SMSgt John Hamilton and the 189th MAF, Arkansas National Guard, Little Rock Air Force Base AR for their outstanding support of this project.

AlC William Burdick performed all Ringelmann opacity readings and compiled the data.

This report has been reviewed by the Office of Information (OI) and is releasable to the National Technical Information Service (NTIS). At NTIS, it will be available to the general public, including foreign nations.

This report is approved for publication.

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### SECTION I

### INTRODUCTION

In a program performed under Air Force Contract Number F08635-77-C-0216, Scott Environmental Technology, Inc., measured the exhaust emissions of three J57-59W engines. The tests were performed on two overhauled and one recently repaired engine at the Air National Guard Test Cell at Little Rock Air Force Base, Arkansas. The emission tests consisted of analysis of the exhaust gases, smoke level and particulate emissions. Smoke and gas analysis were performed using the Air Force Mobile Emissions Laboratory (MEL). The MEL is a state-of-the-art analysis system for turbine engine exhaust emissions measurement. It meets all the standards of the Environmental Protection Agency (40CFR87) and the SAE Aerospace Recommended Practice (ARP) 1256.

A traversing probe was used to collect exhaust samples from four centers of equal area located along an exhaust plane radius. The center point was also sampled for completeness. Complete traverses across the exhaust plume were not possible due to interferences between the traverse probe and the engine stand restraint system. The traverse probe sample inlets were located 1.23 meters downstream of the engine exhaust plane. The smoke transmissometer mounting frame was located 0.51 meters behind the engine exhaust plane. The smoke meter light beam was directed horizontally across the J57 exhaust plume. In addition, Ringelmann readings were made of the exhaust plume.

The emission tests were made at idle, intermediate, military and take-off power. The J57-59W uses water injection at take-off power. Emissions tests were performed during continuous engine operation at idle, intermediate and military power. Due to the restriction of running time at take-off power, the engine was returned to military in between five- minute power bursts to take-off power. One each power burst was used for each one of the five probe samples.

The engine tests are marked 4, 5, and 6 in the data to separate them from tests of a different engine model performed earlier in the program.

# SECTION II

# SUMMARY

As a result of the tests reported herein, the best estimate emission factors for the J57-59W engine have been determined. The factors for the gaseous and particulates emissions are the mean values for the three tests. Likewise, the smoke opacity data are the means for the three engines tested.

TABLE 2-1. J57-59W ENGINE EMISSION FACTORS
Gaseous Emissions

Pollutant	Mode	Emission Index Grams Per Kilograms of Fuel	Emission Rate Kilograms Per Hour
Total Hydrocarbons	Idle	52.90	29.89
	Int.	1.13	1.98
	Mil.	0.21	0.74
	T/O*	2.19	12.02
Carbon Monoxide	Idle	64.90	36.65
	Int.	8.85	15.47
	Mil.	2.37	8.53
	T/O*	21.10	116.12
Total Oxides of	Idle	2.38	1.36
Nitrogen	Int.	6.13	10.75
	Mil.	11.30	40.46
	T/O*	2.71	14.88

<sup>\*</sup>Water augmentation was used in the T/O mode.

TABLE 2-2. J57-59W ENGINE EMISSION FACTORS Particulate Emissions

	Gr	Emission Index cams Per Kilograms	Emission Rate
Pollutant	Mode	of Fuel	Kilograms Per Hour
Particulates	Mil.	10.43	2.27
	T/O*	123.83	19.05

<sup>\*</sup>Water augmentation was used in the T/O mode.

TABLE 2-3. J57-59W ENGINE SMOKE OPACITY MEASUREMENTS

Parameter	Mode	Smoke Opacity (%)
Smoke Opacity	Idle	1
	Int.	5
	Mil.	8
	T/O*	18

<sup>\*</sup>Water augmentation was used in the T/O mode.

### SECTION III

### EXHAUST EMISSION MEASUREMENTS

Thèse measurements were performed by the techniques described in Reference 1 using the Air Force Mobile Emissions Laboratory (MEL) instrumentation and sampling systems. Figures 3-1 and 3-2 are photographs of the MEL and its interior. Figure 3-3 illustrates the MEL's location adjacent to the J57 test cell at Little Rock Air Force Base and Figure 3-4 shows the sample probe being aligned behind the test engine and the opacity meter framework location behind the engine. Calculation of gaseous emission rates was performed using the concentrations measured at the engine exhaust. The procedure is specified in SAE ARP 1256 (Reference 2). The emission rates of total hydrocarbon, carbon monoxide and total oxides of nitrogen were calculated from the exhaust concentrations measured at the various power levels tested. The emission rates of the total oxides of sulfur were calculated from the fuel analysis and fuel flow rates. Emission rates are reported in Emission Index (pounds per thousand pounds of fuel) and pounds per hour. The gas analysis data are contained in several computer generated reports which follow in the appendix. The first report called the Model Summary Report (Appendix A) is a statistical summary of the test results in an emission index format. Next are listed the Individual Engine Test Reports (Appendix B) which describe the test results obtained from each engine. The raw data which were used in calculating the results listed in the first two reports are contained in the remaining material in this section. These reports are: Mass Calculation; Engine Edit Report; Smoke Edit Report; and Concentration Edit Report (Appendices C through F).

Due to restrictions imposed on the traversing probe movement by the proximity of the engine test stand restraining harness, only the lower right hand quadrant of the engine exhaust plane (observer facing upstream) could be sampled. Four sample points at centers of equal area plus the engine center point were sampled. The traversing probe was located 1.23 meters behind the engine exhaust plane.

# 3.0 Description Of Data

All the data of tests 4 and 5 are mass flow weighted. The data of test 6 are area weighted since no exhaust gas temperatures were available for use in calculating exhaust gas flow rates. This was caused by a failure of the exhaust gas thermocouple which went undetected during the test run.

Ref. 1 Air Force Emissions Survey, Scott Environmental Technology, Inc., August 1977, Report Number 1492-50-08-77

Ref. 2 Procedure for the Continuous Measurement of Gas Turbine Exhaust Emissions - Society of Automotive Engineers, ARP 1256.



Figure 3-1. Photograph of MEL



Figure 3-2. Photograph of MEL Interior

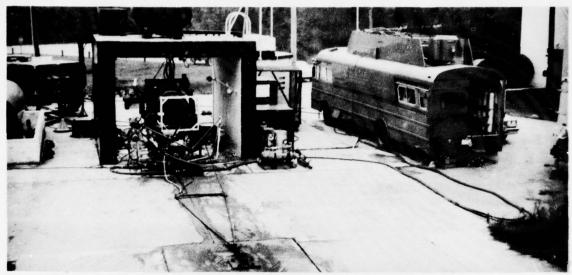


Figure 3-3. MEL Adjacent to J57 Test Cell



Figure 3-4. Sample Probe and Opacity
Meter Installed Behind
J-57 Test Engine

The variations in the data are typical for turbine engine tests. A larger sample would have produced a more statistically significant result. The results for the main pollutants of interest; total hydrocarbons, carbon monoxide, and total oxides of nitrogen, are quite consistent from engine to engine. Total hydrocarbons at military power always show significant variation mostly because the emission levels are very low and a change in a few parts per million of hydrocarbon concentration changes the emission index several percent.

### SECTION IV

# PARTICULATE MEASUREMENTS

Particulate loading measurements of the J57 exhaust were made at military and take-off power setting. The technique used conformed to Environmental Protection Agency Method 5 as published in 40CFR 23 December 1971. The condensible fraction was determined using the method of LAAPCD Source Testing Manual, December 1972.

The particulate sampling system is illustrated in Figure 4-1. A special particulate probe was fashioned from one-fourth inch OD stainless steel tubing bent so that the inlet end of the tube faced into the jet exhaust. The particulate probe inlet was positioned halfway between the smoke probe and the gas probe inlets on the traversing probe. A constant flow rate was drawn into the particulate system using a Scott Model 100 sampling system which conforms to the specifications of EPA Method 5. The sample rate of approximately 0.35 liters/second was set by adjusting  $\Delta H$  to 4.57 centimeters of water differential.

Table 4-1 lists the results of the particulate measurements. It was not possible to calculate the particulate emission rates for test 6 due to the missing exhaust volume rates. The particulate emission rates were calculated from the measured particulate loadings and the measured exhaust volume flow rates. The following equations were used:

Exhaust Volume Flow Rate 
$$(1/s) = \rho V$$
 Ag x 2.17  $1/kg = V$  (1)

Emission Rate (kg/hr) = 
$$\frac{mg}{1}$$
  $x_1 \frac{1.0g}{1000mg}$  x  $\dot{v}$  x 3600 s/hr (2)

Emission Rate 
$$(g/kg) = \frac{g/hr \text{ emission}}{kg/hr \text{ fuel}}$$
 (3)

Where:  $\overline{\rho V}$  is the mass weighting parameter and has the units kg-s/m

A is the nozzle area  $(0.30 \text{ m}^2)$ 

g is the gravitational constant 9.81 m/s<sup>2</sup>

V is the exhaust volume flow rate 1/s

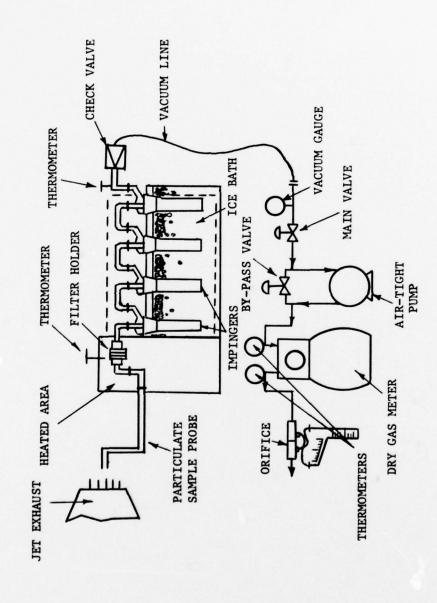


Figure 4-1. Particulate Sampling System

TABLE 4-1. PARTICULATE SUMMARY J57-59W ENGINE TESTS, LITTLE ROCK AFB, SEPTEMBER 1977

Test No.	4		5		6	
	MIL	T/0	MIL	Т/О	MIL	T/O
Acetone Front Fraction - mg	3.00	4.3	3.1	3.5	13.4	6.9
Filter Fraction - mg	10.9	56.6	27.3	59.2	24.8	84.2
Total Front - mg	13.9	60.9	30.4	62.7	38.2	91.1
Organic Extract Fraction - me	g 11.9	11.9	13.1	2.4	12.7	11.5
Water Residue Fraction - mg	14.5	6.0	13.0	3.7	18.7	3.4
Total Back - mg	26.4	17.9	26.1	6.1	31.4	14.9
Total - mg	40.3	78.8	56.5	68.8	69.6	106.0
Sample Volume						
Measured Vol Cu Ft	10.663	4.618	8.743	4.316	8.794	4.413
Wet Test Meter Temp OR	537.1	538.1	534.2	540.6	533.5	537.1
Barometric Press AHg	29.91	29.91	29.70	29.70	29.70	29.70
$\Delta H$ Orifice Press. Drop - $\Delta Hg$	1.6	1.8	1.8	1.8	1.8	1.8
Sample Vol scf*	10.56	4.566	8.647	4.218	8.709	4.341
Water Content						
Final Vol of H <sub>2</sub> 0 Impinger						
+ Silica Gel - ml	176.2	221.8	215.9	245.6	186.2	217.5
Initial Vol. of H <sub>2</sub> 0 - ml	200	200	200	200	200	200
Vol. of H <sub>2</sub> 0 Collected - ml	-23.8	21.8	15.9	45.6	-13.8**	17.5
% Moisture in Exhaust		18.5	8.02	33.9		16.04
Particulate Loading mg/scf	1.31	13.34	3.52	14.86	4.39	20.99
Organic Exhaust Fraction mg/s	scf1.13	2.61	1.51	0.57	1.46	2.65
Residual H <sub>2</sub> O Fraction mg/scf	1.37	1.31	1.50	0.88	2.15	0.78
Total Emission - mg/scf	3.82	17.3	6.53	16.3	7.99	24.4

<sup>\* 29.92</sup> inches Hg, 70°F

<sup>\*\*</sup> Accidental water loss (occurred after test)

TABLE 4-1. PARTICULATE SUMMARY

J57-59W ENGINE TESTS LITTLE ROCK AFB, SEPTEMBER 1977 (continued)

Test No.	4		5			6
	MIL	T/0	MIL	Т/0	MIL	T/0
% of Total by Weight						
Solvent Solubles	29.5	15.1	23.2	3.5	18.2	10.9
Water Solubles	36.0	7.6	23.0	5.4	26.9	3.2
Filtrate	34.5	77.3	53.8	91.1	54.9	85.9
	100	100	100	100	100	100
Emission Rates						
Particulate #/hr	22.73	249.28	60.55	297.38		*
Particulate #/K# fuel	2.88	20.8	7.66	24.2	*	*

<sup>\*</sup> Exhaust volume flow not measured

# SECTION Y

# SMOKE OPACITY

The smoke opacity of the J57-59W test engines was measured using a Wager Model P5 Smoke Transmissometer. The smoke meter was mounted so as to measure horizontally across the exhaust plane at a point 50.8 cm aft of the exhaust nozzle. Table 5-1 contains the smoke density readings obtained on the three J57-59W engines tested. Zero opacity corresponds to no attenuation of the light beam and 100 percent opacity would be complete obscuration of the light beam.

TABLE 5-1. SMOKE TRANSMISSOMETER READINGS

Test No.	Power Mode	Percent Smoke Opacity
4	Idle	1
	Int	4
	Mil	9
	T/O	17
5	Idle	1
	Int	5
	Mil	8
	T/O	17
6	Idle	1
	Int	
	Mil	7.5
	T/O	19

### SECTION VI

# DISCUSSION OF RESULTS

The injection of water into the J57-59W results in higher carbon monoxide, hydrocarbon, and particulate emissions rates. Oxides of nitrogen emissions are decreased by the water augmentation. The variations in emissions over the military thrust mode are very significant. Table 6-1 presents the percentage changes in emissions between the military and water augmentation modes.

The drastic changes in emissions are caused by the water being injected in front of the engine's primary compressor turbines. The injection of water quenches the combustion reaction thereby inhibiting formation of nitrogen oxides and complete combustion of the fuel. This quenching is clearly demonstrated by the fact that the water augmented exhaust temperature is only 2°C higher than that in military, in spite of a 56 percent greater fuel flow. The net result is an increase in carbon monoxide and hydrocarbons and a decrease in oxides of nitrogen emissions. There is also an increase in particulate emissions because of the addition of the particulate matter from the water and collection of some of the additional hydrocarbons as particulate matter.

Water augmentation also increases the opacity of the J57-59W engine's plume. The opacity of the plume was measured by a transmissometer and a Ringelmann reader. The results from the transmissometer data are much lower than the Ringelmann opacity readings (Table 6-2). This was because the Ringelmann readings were taken after condensation of steam in the plume began to occur. Therefore, the transmissometer indicated a lower opacity measurement than the plumes maximum opacity. Smoke Number measurements were also taken and are shown in Table 6-2.

Table 6-2 presents the means for smoke number, transmissometer and Ringelmann data. The percent change between military and water augmentation is calculated for each type of measurement. The relative increases indicate major increases in both particulate emissions and smoke using water injection.

In conclusion. the results indicate that water augmentation causes increases in almost all emissions except oxides of nitrogen which are lower. These factors are "best estimates" and should be used for environmental assessments.

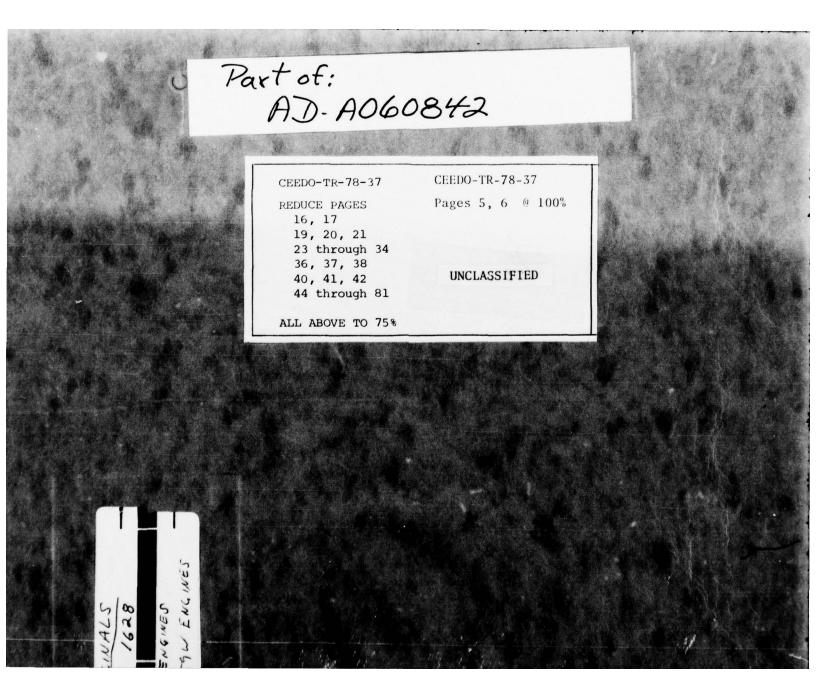
TABLE 6-1. RELATIVE EMISSIONS INCREASES FROM WATER AUGMENTATION J57-59W

	Emissi	ons (kg/hr)	Percent	
Pollutant	Military	Water Augmentation	Increase (Decrease)	
Carbon Monoxide	8.5	116.30	1264	
Hydrocarbons	0.7	12.0	1556	
Oxides of Nitrogen	40.5	14.9	(63)	
Particulates	18.9	124.0	557	

TABLE 6-2. J57-59W OPACITY AND SMOKE NUMBER MEASUREMENTS

Type of Measurement	Military	Water Augmentation	Percent Increase
Transmissometer (percent opacity)	8.2	18.0	120
Ringelmann (percent opacity)	15.5	45.5	194
S.A.E. Smoke Number	43.0	62.4	45

APPENDIX A MODEL SUMMARIES



SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
ENGINE MODEL SUMMARY REPORT

THE STATE OF THE S

SET 1628-002-1077

REPORT DATE 10/27/77
USAF CONTRACT F08635-77-0216

ENGINE MODEL : JS7-594

TEST LOCATION : LRAFB. ARK.

ENGINE 2, PAGE 1

# \*\*\*\* CATEGORY B TESTS ONLY \*\*\*\*

EXHAUST MASS EMISSION INDICES :

	EXHAUST HASS EMISSION INDICES :	INDICES											
			-	101 / 1 -	. / 1000s FUEL		*	*		#	/ HR		
PARAM	TEST MODE	NO. 08S	MAX	MIN VALUE	MEAN	STND	T COEF	NO. 08S	MAX	MIN	MEAN	SIND	Z COEF
THC.	IOLÉ	" "	69.01	38.17	52.91	15.464	29.23	1 ~ 0	86.26	49.65	65.92	18.652	28.30
	INTERMED.	- m	1.37	0.7.	1.13	0.339	30.05	<b>5</b> M	5.35	2.81	4.37	1.366	31.25
	MILITARY TAKE-OFF	m m	2.65	0.05	0.21	0.214	103.36	m m	3.57	23.72	1.64	1.701	103.93
5	Toric	, .	13 61					, .					
3	INF	•	16.84	20.00	64.43	10	14.11	n 0		99.00	9.09	15.51	1.60
	INTERMED.	. *	11.27	6.75	8.85	2.278	25.75		42.8	26.3	34.1	8.29	2.43
	MILITARY	3	26.2	2.04	2.37	0.477	20.11	٣	23.1	16.1	18.8	3.79	2.02
0	TAKE-OFF		22.70	18.88	21.12	1.994	9.44	M	274.6	226.6	256.4	26.00	1.01
XON 1	IOLE	m	2.40	2.35	2.38	0.026	11.11	m	3.11	2.88	2.98	0.119	4.01
.6	INTERMED.	o •	94.9	5.60	6-13	0.464	1.56	o m	25.13	21.27	23.73	2.137	6.03
	MILITARY		12.03	10.48	11.29	0.778	68.9	m	95.06	82.79	89.22	6.157	06.9
	TAKE-OFF	2	3.32	2.36	2.71	0.533	19.68	M	39.86	28.57	32.80	6.156	18.77
ON	IDLE	m	0.57	0.19	0.35	0.199	57.28	M	17.0	0.25	0.43	0.244	56.26
	INTERMED.	o m	4.87	3.89	4.51	0.537	11.91	) M	18.97	14.78	17.43	2.307	13.24
	MILITARY	3	10.56	9.24	9.95	0.665	6.68	2	83.45	12.97	78.57	5.277	6.72
	TAKE-OFF	3	1.52	1.46	1.49	0.030	2.01	M	18.33	17.65	18.08	0.374	2.07
N02	101.6	m	12.21	1.78	2.04	0.227	11.14	mo	2.87	2.23	2.55	0.320	12.57
	INTERMED.	· m	1.71	1.49	1.63	0.122	7.46	2 10	6.58	5.81	6.29	0.421	69.9
	MILITARY	3	1.47	1.24	1.35	0.116	8.61	3	11.61	9.82	10.65	0.902	8.47
	TAKE-OFF	3	1.80	06.0	1.22	0.506	41.57	•	21.60	10.91	14.72	5.972	40.58
Sox	IDLE	0						•	1.82	1.20	1.42	945.0	24.20
	INTERMED. MILITARY TAKE-OFF	0000		THIS PAGE IS BEST QUALITY FRACTICARIA	S BEST QUAL	TITY PRACTI	CABLE	O M M M	5.32	3.90 7.89	4.37 8.94 13.72	0.820	38.75 20.40 19.33

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SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
ENGINE HODEL SUMMARY REPORT

ENGINE MODEL : JS7-594

TEST LOCATION : LRAFB. ARK.

SET 1628-002-1077

NEPORT DATE 10/27/77
USAF CONTRACT F08635-77-0216

ENGINE 2, PAGE 2

\*\*\*\* CATEGORY B TESTS ONLY \*\*\*\*

MEASURED FUEL FLOM & SMOKE NUMBER :

	•		MEAS. FUEL	FLO# - #/HR	#/HR	*	*		SMOKE	NUMBER		1
TEST MODE	.0N	MAX	NIN	MEAN	SIND	\$ COEF	NO.		Z I	MEAN	SIND	2 COEF
	088	VALUE	VALUE		06.4	VAR	085		VALUE		DEV	VAR
	-									1 1 1 1 1	1 1 1 1	
TOLE	2	1300	1200	1250	50.0	4.00	2	8.38	4.75	6.54	1.815	27.74
	0						0					
INTERMED.		3900	3800	3867	51.1	1.49	~	34.13	25.75	30.13	4.202	13.9
MILITARY	3	1900	1900	1900	0.0	00.0	3	43.88	41.75	43.00	1.114	2.59
TAKE-OFF	2	12300	12000	12133	152.8	1.26	2	67.38	53.75	62.42	7.534	12.0

0

APPENDIX B

INDIVIDUAL ENGINE TEST REPORTS

SCOTT ENVIRONMENTAL TECHNOLOGY INC. USAF TURBINE ENGINE EMISSIONS INVENTORY INDIVIDUAL ENGINE TEST REPORT	NMENTAL ENGINE NGINE TE	FECHNOL (EMISSION ST. REPORT	JGY INC.	TORY			SET 10	SET 1628-002-1017			sn	REFORT DATE 10/27/77 USAF CONTRACT F08635-77-0216	FEFORT DATE 10/27/77 TRACI F08635-77-0216	10/27/	11
SCOTT TEST NUMBER	UMBER	4. IYPE	20				TEST DATE :	IE: 9/ 6/17	1.1			13	ENGINE 2. NUMBER	NUMBER.	-
ENGINE TYPE & MODEL : JS7-59W ENGINE SERIAL # : P630584 TOTAL ENGINE TIME : 0 HRS- PERFORMANCE TEST RESULTS : PASS	E MODEL L # : P6 TIME :	1 0	HRS. PASS								#	1EST LOCATION 1EST CELL 1EST CELL SCOTT SU	OCATION : LRAFE ST CELL NUMBER : ST CELL OPERATOR SCOTT SUPERVISOR	1	:
AIR FLOW MEASUREMENT METHOD : NONE	SUREMENT	ME THOD	: NONE									SMC	INSTRUMENT OPERATOR	108 : PR	0.0
TEST ENVIRONMENTAL CONDITIONS	MENTAL C	ONDITION	VS : START	F 4	FINISH		S	FLOW RATE : 23 LPM	23 LPM			FUEL	FUEL ANALYSIS	,	
TEST TIME	TEST TIME CMIL.TIME) :	HE3 :	13	1350				TEMPERATURE : 300 DEG.F	300 0	F6.F		TYPE	TYPE : JP-4		
INLET AIR TEMP. (DEG.F) :	TEMP. 10	EG.F.) :		89.0	20.58			LENGTH : 100 FT.	00 FT.			H . L	WI. & CARBON :	85.55	555
RELATIVE HUMIDITY (%)	HUMIDITY	8 1			**								MI.X SULFUR :		200
H W9)	(6M H20/6M DRY AIR)	AIR	0.0100	06	0.0190							253	CZH RATIO-MASS:		
TEST HODE	RATED POWER	THRUST	FUEL	AIR FLOW		FIA	£ ₽ 8	THC	0 1	co2	X 7 X X	0 4	NO2	SN SMOKE*	*/A
IDLE	2	200	1300				-	379.28	288.1	1.0.1	8.29	0.65			0.0232
INTERMED.	0 0	3750	3800			100.	1.500	69.6	4.4	1.49	25.53	17.73	92.0	25.75	0.0232
TANE-OFF	125	11400	12000			910	2.190	73.84	300.9	3.14	32.22	14.76	17.46		0.0232
EXHAUST MASS EMISSION INDICES :	ENISSIO	N INDICE													
	!=	1	!	# / 1000# Co2		0.0	N02	# 1HC	00	200	NOX HR	NO	N02	×05	
IDLE	38.17		'	2951	2.39	0.19	2.21	49.65	65.8	3837	3.11	0.25	2.87	1.82	
INTERMED.	0	-	11.27	3116	5.60	3.89	1.1	2.81	42.8	11840	21.27	14.78	6.40	5.32	
TAKE-OFF	7	2.65 16	18.88	3099	3.32	1.52	1.80	31.85	226.6	37182	39.86	18.20	21.60	16.78	

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\*\* AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

	SCOTT ENVIRONMENTAL TECHNOLOGY INC.	OGY INC.		SET 1628-002-1077	REPORT DATE 10/2
	INDIVIDUAL ENGINE TEST REPORT	RT INVENIOR			USAL CONTRACT TURESSELLE
	SCOTT TEST NUMBER S, TYPE	E 8		. TEST DATE : 9/ 7/77	ENGINE 2, NUMBE
	ENGINE TYPE & MODEL : J57-594 ENGINE SERIAL # : P634272	*6			TEST LOCATION : LRAFB - 1
1	TOTAL ENGINE TIME : 0 HRS. PERFORMANCE TEST RESULTS : PASS	HRS. PASS			TEST CELL OPERATOR : SCOTT SUPERVISOR :
	AIR FLOW MEASUREMENT METHOD : NONE	: NONE			INSTRUMENT OPERATOR :
20	TEST ENVIRONHENTAL CONDITIONS :			SAMPLE LINE :	FUEL ANALYSIS :
		START	FINISH	FLOW RATE : 23 LPM	SAMPLE # : 5
	TEST TIME (MIL.TIME) :	1410	1610	TEMPERATURE : 300 DEG.F	TYPE : JP-4
	INLET AIR TEMP. (DEG.F) :	87.0	87.0	LENGTH : 100 FT.	WT. Z CARBON : 8

10/27/77 5-77-0216 ARK.

8 : NG

NUMBER

. FL ..

	NO2 * SHOKE	PPM SN WIA		5.69 8.38 0.0	6.67 30.50 0.0	9.97 43.38 0.0	9.47 67.38 0.0
		add.					
	×O×	Mdd	1 1 1 1	7.51	28.43	81.64	24.39
	005	*		16.0	1.46	2.25	3.23
	00	PPM		382.2	49.6	22.7	358.2
	140	PPMC		632.30	16.30	0.91	55.92
	EPR				1.500	2.310	2.790
	FIA	CALC		•000	1000	110.	.016
	F/A	ACT					
	FLOW	#/HR					
	FUEL	*/HR		1250	3900	7900	12300
	THRUST			250	3460	0606	11580
	RATED	POMER		2	0.	100	125
	ST HODE			37	TERMED.	LITARY	ME-OFF
- 1/10 a	1	77	1	2	=	=	=

••

EXHAUST MASS EMISSION INDICES

85.53 14.62 0.05 2.05 5.85

CZH RATIO-MASS:

SAMPLE # : 5
TYPE : JP-4
KT.2 CARBON :
KT.2 HYDROGEN :
MT.2 SULFUR :
H/C RAIIO-AIM.:

1610 87.0 29.70

1410 87.0 29.70

TEST TIME (MIL.TIME):
INLET AIR TEMP.(DEG.F):
ATMOSPHERIC PRESS.(IN.HG):
RELATIVE HUMIDITY (1):
INLET AIR HUMIDITY -

0.0176

0.0176

	*	/ #	1 1000	IN FUEL		#	*			# / HR			
7	THE	00	200	NOX	0 N	N02	THC	00	C02	XON	ON	20N	×05
	10.69	72.84	2823	2.35	0.57	1.78	86.26	91.1	3528	2.94	0.71	2.23	1.25
ERMED.	1.27	6.75	3112	6.36	4.87	1.49	4.95	26.3	12138	24.79	18.97	5.81	3.90
4IL ITARY	0.02	2.04	3123	12.03	10.56	1.47	0.37	16.1	24673	95.06	83.45	11.61	7.89
E-0FF	1.95	21.78	3087	2.44	1.49	0.95	23.95	267.9	37969	29.96	18.33	11.64	12.29

AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

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SCOTT TEST NUMBER		6. TYPE	8				TEST DATE	F : 91 8/77				Ð	ENGINE 2	2, NUMBER	~
ENGINE TYPE & MODEL : JS7-594 ENGINE SERIAL # : P634817 TOTAL ENGINE TIME : 1759 HRS. PERFORMANCE TEST RESULTS : PASS	MODEL: # : P634 TIME :	: J57-59# 634817 1759 HR SULTS : PA	3.8								16.	TEST LOCATION TEST CELL TEST CELL SCOTT SE	OCATION : LRAFB ST CELL NUMBER : ST CELL OPERATOR SCUTT SUPERVISOR	1	
AIR FLOW MEASUREMENT METHOD : NONE	UREMENT !	4E THOD :	NONE									INSTRUME	INSTRUMENT OPERATOR SMOKE OPERATOR	ATOR : AS	a vi
TEST ENVIRONMENTAL CONDITIONS	ENTAL CO	VOITIONS	START		INISH		SA	SAMPLE LINE : FLOW RATE : 23 LPM	23 LPM			FUEL ANALY	UEL ANALYSIS		
TEST TIME (MIL.TIME) :	TEND INF		1315		1500			TEMPERATURE : 300 DEG.F	300 0	£6.F		TYPE	7 6		0
ATMOSPHERIC PRESS.(IN.HG) RELATIVE HUMIDITY (1) :	C PRESS.		: 29.70		29.70				•	-				EN : 14.28	28
INLET AIR HUMIDITY	T AIR HUMIDITY	AIR) :	0.0159	0 6	6510-0							7 117	HIC RATIO-ATM.: C/H RATIO-MASS:		000
TEST MODE	RATED 1	THRUST	FUEL FLOW	AIR FLOW #7HR	F/A ACT	F/A CALC	EPR	THC PPMC	00 8	C02	N 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0	NO2	SNO	SMOKE*
101.6	2		1200			.005		480.64	380.8	0.98	7.80	0.92	6.88	6.50	0.0232
INTERMED.	0.	4570	3900			9000	1.500	15.90	56.5	1.32	26.02	19.21	6.81		0.0232
TAKE-OFF	125	13160	12100			.010	2.780	57.93	384.1	3.33	24.32	15.03	9.29	53.75	0.0232
EXHAUST MASS EMISSION INDICES	EMISSION	INDICES													
	THE	000	-	/ 1000# C02	FUEL	0.0	80N	1HC	000	C02	NOX	0.0	N02	**************************************	
1	1:	1	1		-		!!			1					
INTERMED.	1.37	37 8.52		3121	0.44	4.76	1.69	5.35	33.0	12170	25.13	18.55	2.54	3.90	
HILITARY	0.12			-	1.37	10.04	1.33	0.97	23.1	24749	89.82	19.29	10.52	7.89	
TAKE-OFF	1.96	96 22.10		3097	2.36	1.46	06.0	23.12	274.6	37470	28.57	17.65	10.91	12.09	

FIN

STOP REPORT

APPENDIX C
MASS DATA CALCULATIONS

The state of the state of

SET 1628-002-1017

NEFORT DATE 10/27/77 USAF CONTRACT F08635-77-0216

\*\*\*\*\* START RUN 4 \*\*\*

\*

. 07 % 1EST 1YPE : 8 FUEL SULFUR : 2.01 HIC RATIOIATMI : FUEL : # 4 - JP-4 IAT : 89.0 DEG.F ENGINE TYPE : J57-594 BP : 29.58 IN.HG

PT3 = 17.1 PS16 AIR FLOW : 200 # 1 \*\*\*\* - 25d .00 IN.H20 ITHRUST = P12 = \*\*\*\*\* MODE 1 - IDLE .00 IN.H20 FPE ..

#--- SMOKE ---# .0232 .0232 .0232 .0232 .0232 3.00 5.50 5.00 5.50 4.75 12.00 .000 SN ACTUAL F/A RATIO = .00 4.58 6.05 7.82 8.70 8.81 6.81 N02 .59 NO M 5.57 6.74 8.51 9.40 7.55 PPR 16. .89 1.10 1.19 1.16 D. #/HR 261.04 309.39 290.74 278.64 283.66 284.95 CO P P M 439.97 348.32 347.09 236.73 347.65 343.17 THE MASS FL. .6375 (RHO+V) .5876 .0000 .6251 00. EXH. VEL FT/SEC 384.70 471.54 529.01 464.83 461.75 1300. # /HR DENS. .0000 .0014 .0014 (RHO) .0015 .0013 FUEL FLOW P101 PSIA 14.5 15.6 15.5 15.3 461.2 525.0 523.2 TEMP. DE 6 . F 320.8 381.2 422.1 \* SAMPLE POINT . LOCATION . NUM . AVERAGE

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900. MASS-WGHID. = .005 CALCULATED FIA RATIOS FOR ABOVE AVERAGE CONCENTRATIONS : AREA-WGHTD. (NUM) =

1.64

.65

8.29

1.07

288.11

379.28

MASS EMISSIONS :

23

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MASS-WGHTD.

* SOX *	#/HR	 1.82	1.82
* 2	#/HR	 2.82	2.87
# NO	#/1000#	 2.17 2.82	2.21
# NO	#/1000#	 .24 .31	.19
* X	#/HR	 3.12	3.11
		2.40 3.12	
* 2	8/HR	 3828.	3837.
03	#/1000#	 2944. 3828.	2951.
*	#/HR	 71.17	65.8
00*	#/1000#	 55.19 71.7	50.63
* 3	#/HR	 84.64	49.62
#	*/1000#	 38.06 49.48	38.17
		AREA-WGHTD.	

\* MID-POINT - NOT INCLUDED IN AVERAGES

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SET 1628-002-1077

USAF CONTRACT FOR635-77-0216 REPORT DATE 10/27/77

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TEST TYPE :

FUEL SULFUR :

2.01

HIC RATIOIATMI :

ENGINE SN : P630584

FUEL : # 4

IAT : 89.0 DEG.F

ENGINE TYPE : JS7-59W BP : 29.58 IN.HG

\* \* \* \* \* \* \* \* \* z 5 ~ NO U . . . . . . .

3750 # 1 \*\*\*\* (THRUST = .... HODE 3 - INTERMED.

\*--- SMOKE ---\* .0232 .0232 .0232 .0232 .0232 W/W 30.00 4.00 37.00 25.75 32.00 40.50 SN ACTUAL F/A RATIO = .000 7.16 7.43 81.9 NO2 .007 11.82 20.96 17.73 19.56 17.01 NON 23.11 29.05 29.05 26.34 25.53 24.44 16.56 M dd NON P13 = 29.3 PSIG 1.50 1.43 1 . 49 £ 05 0. #/HR 121.55 51.43 57.73 70.55 19.75 84.43 004 .10 AIR FLOW = 10.44 69.6 10.06 12.65 THC 1.1295 (RHO\*V) .7620 1.1510 1.2701 P 52 = EXH.VEL FT/SEC 1120.75 536.89 861.60 1082.99 923.29 .00 IN.H20 DENS. .0012 (RHO) .0013 .0014 .0013 .0012 FUEL FLOW PSIA 20.5 PTOT 16.0 18.2 19.9 18.9 656.0 702.2 675.8 0E 6.F TEMP. 423.9 578.6 532.1 MASS-WGHTD. .00 IN.H20 . SAMPLE POINT . LOCATION AVERAGE : NUM. 0 1

MASS-WGHID. = .007 CALCULATED FIA RATIOS FOR ABOVE AVERAGE CONCENTRATIONS : APEA-KGHTD.INUM) : MASS EMISSIONS :

24

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6.45 #/HR 4---- NO2 #/1000# 1.69 #/HR 14.70 #/1000# 3.87 3.89 #/HR 21.12 #/1000# #/HR 5.56 5.60 \*---- 602 ----#/HE 11841. 11840. #/1000# 3116. 3116. # /HR 42.0 03 ----\*/1000# 11.04 11.27 #/HR 3.03 \*--- THC ----110000 .7. AREA-WGHTD.

\* XOS \*

#/HR

5.32

. MID-POINT - NOT INCLUDED IN AVERAGES

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SET 1628-002-1077

REPORT DATE 10/27/77 USAF CONTRACT F08635-77-0216

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* * * * * * * * * * * * * * * * * * *	ENGINE SN : P630584 FUEL : # 4 - JP-4 H/C RATIOIATM) : 2.01 FUEL SULFUR :
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	ENGINE TYPE : J57-594 BP : 29.58 IN.HG
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	:	***** HODE 4 - MILITARY	TARY	=	(THRUST = 9190 # 1 ****	# 0616	****									
0	P71 ::	.00 IN.H20		PT2 = FUEL FLOW	00.	IN.H20 F	PS2 =	.00 IN AIR FL	IN.H20 FLOW =	PT3 = 0. #/	PT3 = 44.8 F	PS16 ACTU	ACTUAL FIA H	= 68.2 IN.H6	1N.H6	
0	* SAMPL	SAMPLE POINT .	TEMP. DEG.F		DENS.	EXH.VEL FT/SEC	FASS FL.		THC	004	C02	X O d	N 0 4 4	N02	SN MIA	ONE
	-		605.8	•		953.13		'	00.	15.11	1.58	46.16	43.19	2.97	40.50	.0232
0	2		786.3			1375.61			19.01	19.89	2.11	65.38	59.36	6.02	43.00	.0232
	3		961.8			1734.74			7.80	25.97	2.48	19.68	86.83	10.70	47.00	.0232
	•		1002.3			1825.85			1.81	30.05	2.34	19.23	68.04	11.19	45.00	.0232
0	5 .		8.956			1676.34			6.25	37.04	2.02	67.21	57.75	9.46	48.00	.0232
		1	1000	1 3				•	1 .		11.	1	1 0	1:	100	1 5
0	AVEKABE	HASS-WGHTD	937.0	7.67		14/2.33			8.65	23.70	2.18	10.69	61.64	8.29	18.5.	•0636

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AREA-WGHTD47 3.71 2.15 16.8 3131. 24734. 10.48 82.79 9.24 72.97 1.24 9.82 11.05		* THC*	* JH	-	* 0	10	* 71	N*	# NC	*	N	* 21	
.47 3.71 2.13 16.8 3131. 24734. 10.40 82.18 9.21 72.79 1.19 9.38		*/1000#	#/HR	*/1000	#/HR	#/1000#	#/HR	#/1000#	#/1000#	# / HR	#/1000#	#/HR	
47 3.71 2.13 16.8 3131. 24734. 10.40 82.18 9.21 72.79 1.19 9.3845 3.57 2.16 17.1 3131. 24734. 10.48 82.79 9.24 72.97 1.24 9.82													
45 3.57 2.16 17.1 3131. 24734. 10.48 82.79 9.24 72.97 1.24 9.82	AREA-WGHTD.	14.	3.71	2.13	16.8	3131.	24734.	10.40	9.21	72.79	1.19	9.38	
	MASS-WGHTD.	54.	3.57	2.16	17.1	3131.	24734.	10.48	9.24	12.97	1.24	9.82	

<sup>\*</sup> MID-POINT - NOT INCLUDED IN AVERAGES

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NEPORT DATE 10/27/77 USAF CONTRACT F08635-77-0216

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SET 1628-002-1077

œ •• FUEL SULFUR : 2.01 •• HIC RATIOLATMI SN : P630584 4-40 ENGINE . \*\* FUEL 89.0 DEG.F IAT : ENGINE TYPE : JS7-594 8P : 29.58 IN.HG

\*\*\*\* MODE 5 - TAKE-OFF (THRUST = 11400 # 1 \*\*\*\*

.0232 .0232 .0232 .0232 \*--- SMONE 71.00 04.50 66.12 65.00 64.00 ACTUAL F/A RATIO = .000 S 34.86 10.73 14.62 13.61 18.45 17.46 N02 30.78 8.29 6.89 13.85 15.70 ON d 65.64 19.02 24.51 27.46 34.16 PPM NON 44.3 PS16 2.37 3.60 3.39 3.08 0. #/HR PT3 = 236.80 300.85 268.39 324.20 356.88 296.57 00 \* dd 3.45 AIR FLOW : 113.44 64.95 69.32 PPMC MASS FL. SRHOOV 1.3889 1.6964 1.9639 1.8699 1.7298 \*\* PSZ EXH.VEL FIVSEC 1215.80 1921.47 1868.78 1648.77 1589.04 .00 IN.H20 = 120000. #/HR .0010 DENS. (RHO) .0010 .0011 .0011 .0011 FUEL FLOW PSIA 30.8 P12 = TEHP. DE 6.F 921.4 727.8 1032.0 1041.3 MASS-WEHTD. .000 IN.H20 \* SAMPLE POINT \* NO LOCATION AVERAGE : NUM. EPR =

.016 MASS-WGHID. = .015 CALCULATED F/A RATIOS FOR ABOVE AVERAGE CONCENTRATIONS : AREA-WGHTD. (NUM) =

MASS ENISSIONS :

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\* x05 16.78 #/HR 23.27 # /HE \*---- NO2 #/1000# 1.80 1.94 19.80 #/HE ON ----#/1000# 1.65 39.86 #/HE \*0N ----#/1000# 3.59 #/HR 37185. \*---- C03 \*/1000# 3088. 3089. #/HR 227.1 00 \*/1000# 18.97 18.88 #/HR 31.85 30.48 \*/1000# 2.54 2.65 AREA-WGHTD.

\* MID-POINT - NOT INCLUDED IN AVERAGES

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SET 1628-002-1077

NEPORT DATE 10/27/77 USAF: CONTRACT F08635-77-0216

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ENGINE BP : 29		FPB ::	. SAMPLI			2	3		•	AVERAGE : NUM.	
ENGINE TYPE : J57-59W BP : 29.70 IN.HG	***** HODE 1 - IDLE	FPR = .000 IN.H20	SAMPLE POINT .							. NUM .	MASS-WGHTD.
-59W	ı		TEMP.		308.6	393.1	466.6	532.9	547.0	425.3	.0
: 67.6	Ē	12 = L FLOW	PT 01 PS IA		14.9	15.2	15.5	15.7	15.4	15.3	
IAT : 87.0 DEG.F	LIHRUST =	.00 IN	DENS.		.0016					.0014	
		PT2 = .00 IN.H20 FUEL FLOW = 1250. #7HR	EXH.VEL								
ENGI	250 # 1 *****		EL MAS		. 51	. 59	. 00	. 84	. 61	16	
NE SN	:	.00 AIR	MASS FL.								
FUEL : # 5 - JP-4		PS2 = .00 IN.H20 AIR FLOW =	THC		403.75	566.79	768.54	16.469	530.53	608.50	632.30
		P.13	2 4	1						,	
HZC RAT10(ATM) : 2.05		PT3 = 16.7 PS16	2005		99.	. 82	1.04	1.12	1.16	16.	16.
2.05		PS16 ACT	XON		5.38	6.57	1.99	60.6	15.6	7.26	7.51
		PT5/7 = 32.5 IN.HG ACTUAL F/A RATIO = .000	0 N O M O M	•						•	
FUEL SULFUR: 8		= 32.5 RATIO =	NO2 PPM		2.82	4.71	04.9	7.55	8.10	5.37	5.69
Pt : 8		1N.H6	NOZ 8 SMOKE#		12.00	00.9	7.00	8.50	6.50	8.37	
			OKE -		.02	.023	.023	.023	.02	-02	

.005 .005 , MASS-WGHID. = CALCULATED FIA RATIOS FOR ABOVE AVERAGE CONCENTRATIONS : AREA-WGHID.INUM) : MASS EMISSIONS :

27

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* SOX *	#/HR	 1.25	1.25
2	# /HR	 2.18	2.23
W	#/1000#	 1.74 2.18	1.78
*	# /HR	 11.	.71
0N#	#/1000#	 .61	.57
* X	#/HR	 5.94	5.94
ON#	#/1000#	 2.35 2.94	2.35
03	#/1000#	 2824.	2823.
*	#/HR	 90.3	91.1
00	*/1000#	 72.26 90.3 2824. 3530.	12.84
**************************************	*/1000*	 68.83 86.03	69.01
		AREA-WGHTD.	MASS-WGHTD.

<sup>\*</sup> MID-POINT - NOT INCLUDED IN AVERAGES

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SET 1628-002-1077

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CONT

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## SCOTT ENVIRONMENTAL TECHNOLOGY INC. USAF TURBINE ENGINE EMISSIONS INVENTORY EDIT REPORT - MASS DATA CALCULATIONS

TEST TYPE : B FUEL SULFUR : .05 %
2.05
ENGINE SN : P634272 FUEL : # 5 - JP-4 H/C RATIOIATM) :
ENGINE TYPE : J57-594 BP : 29.70 IN.HG IAT : 87.0 DEG.F

•	**** HODE 3 - INTERMED.	TERMED.	114	E ISO	(THRUST = 3460 # 1 ****	****								
•	P71 = .00 IN.H20 EPR = .000		PT2 = FUEL FLOW :	.00 IN.H20	20 P	PS2 = .00 IN.H20 AIR FLOW =	10 IN.H20	613	PT3 = 28.8 PS16	16 ACTU	16 PTS/7 = 45.0 IN.HG ACTUAL F/A RATIO = .000	45.0	1N.H6	
	* SAMPLE POINT * TEMP. NO LOCATION DEG.F	TEMP. PTOT DEG.F PSIA	P101	DENS.	EXH.VEL FT/SEC	HASS FL.	THC	UENS. EXH.VEL MASS FL. THC CO	C02	NON	N 4	NO2	NO2 + SHOKE -	E

. тнс со	PPMC PPM		.8330 22.19 36.73 1.07	18.20 49.85	18.52 58.70	8.95 48.40	5.92 45.04		16.96 48.42	49.58
-		'	* 600.44		_	_	_	'		
			16.4 .0014							
	0£6.F		1 453.2						AVERAGE : NUM. 594.4	MASS-WGHTD.
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MASS-WGHTD.	
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E CONCENTRATIONS :	
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CALCULATED FIA RATIOS FOR	SN
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Con	MASS EMISSIONS
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* XOS *	#/HR		3.90	3.90
15	#/HE		5.17	5.81
0N	#/1000#	1 1 1 1	1.48 5.77	1.49
#	#/HE		18.86	18.97
ON	#/1000#		4.84 18.86	4.87
* X	3118		24.63	24.79
DN	#/1000#		6.32 24.63	6.36
* 2	#/HR		12137.	12138.
)) <del>*</del>	#/1000#		3112. 12137.	31112.
*	#/HR		26.4	26.3
03*	*/1000#		6.78 26.4	6.15
* 3	#/HR		5.30	4.95
* JHC*	8/1000# #/HR		1.36 5.30	1.27
			AREA-WGHTD.	MASS-WGHTD.

<sup>\*</sup> MID-POINT - NOT INCLUDED IN AVERAGES

SCOTT ENVIRONMENTAL TECHNOLOGY INC. USAF TURBINE ENGINE ENISSIONS INVENTORY EDIT REPORT - MASS DATA CALCULATIONS

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SET 1628-002-1077

REPORT DATE 10/27/77 USAF CONTRACT F08635-77-0216

\* \* \* \* \* \* \* \* S Z 2 œ • CONT .......

\* \*

.05 % FUEL SULFUR : 2.05 HIC RATIOGATMS : ENGINE SN : P634272 FUEL : # IAT : 87.0 DEG.F ENGINE TYPE : J57-594 BP : 29.70 IN.HG

\*\*\*\*\* 1 # 0606 11 (THRUST \*\*\*\*\* HODE 4 - HILITARY

#PLE POINT # TEMP. PTOT DENS. EXH.VEL HASS FL. LOCATION DEG.F PSIA (RHO) FT/SEC (RHO*V)  100CATION DEG.F PSIA (RHO) FT/SEC (RHO*V)  100TOT 1005.52 1.2164  100TOT 28.5 .0012 1005.52 1.2164  100TOT 28.5 .0011 1370.66 1.5169  100TOT 28.5 .0011 1370.66 1.5169  100TOT 28.5 .0011 1370.66 1.5169  100TOT 28.5 .0011 1482.27 1.5924  MASS-WGHTD,  ULATED F/A RATIOS FOR ABOVE AVERAGE CONCENTRATIONS : ARE	PT1 =	.00 IN.H20		P12 =	. 00 IN.		.52 = .00	IN.HZO	PT3	2 43.5	P S 16	P15/7	8.89	IN.H6	
EXH.VEL MASS FL. THC CO CO2 NOX NO NO2  F I/SEC (RHO&V) PPHC FPH R PPH PPH PPH 1005.52 1.2164 1.34 13.19 1.63 56.28 51.94 4.34 1370.66 1.5169 1.27 19.58 2.15 74.79 69.67 5.12 1733.15 1.7843 .32 26.84 2.55 77.73 81.57 15.56 1819.72 1.7126 .00 26.31 2.10 80.47 70.74 9.73 1482.27 1.5924 .98 21.79 2.16 79.29 69.97 9.32 1482.27 1.5924 .98 21.79 2.16 79.29 69.97 9.32	EPR :	000.		FLOW	190		AIR	FLOW =	0.	/HR	ACT	UAL FIA	RATIO =	0000	
FT/SEC (RHO&V) PPHC FPH T PPH PPH PPH PPH PPH PPH PPH PPH PPH	SAMPL	E POINT .		P101	DENS.			THC		202	NOX	0 N	NO 2		OKE
1005.52 1.2164 1.34 13.19 1.63 56.28 51.94 4.34 13.066 1.5169 1.27 19.58 2.15 71.77 69.67 5.12 1370.66 1.5169 1.27 19.58 2.15 71.13 81.57 15.56 1819.75 1.8519 .00 27.57 2.33 88.97 76.71 12.26 1689.92 1.7126 .00 26.31 2.10 80.47 70.74 9.73 14.82.27 1.5924 .98 21.79 2.16 79.29 69.97 9.32 14.82.27 1.5924 .91 22.71 2.22 81.64 71.66 9.97 CONCENTRATIONS : AREA-WGHTD. (NUM) = .011 , MASS-WGHTD. = .011	0 N	LOCATION		PSIA	(RHO)			PPMC		*	N dd	H dd	Mdd		W/W
1005.52 1.2164 1.34 13.19 1.63 56.28 51.94 4.34 13.70.66 1.5169 1.27 19.58 2.15 74.79 69.67 5.12 1733.15 1.7843 .32 26.84 2.55 97.13 81.57 15.56 1819.75 1.8519 .00 27.57 2.33 88.97 76.71 12.26 1889.92 1.7126 .00 26.31 2.10 80.47 70.74 9.73 1482.27 1.5924 .98 21.79 2.16 79.29 69.97 9.73 .91 22.71 2.22 81.64 71.66 9.97 6.97 CONCENTRATIONS : AREA-WGHTD.(NUM) = .011 , MASS-WGHTD. = .011															
1370.66 1.5169 1.27 19.58 2.15 74.79 69.67 5.12 1733.15 1.7843 .32 26.84 2.55 97.13 81.57 15.56 1819.75 1.8519 .00 27.57 2.33 88.97 76.71 12.26 1689.92 1.7126 .00 26.31 2.10 80.47 70.74 9.73 1482.27 1.5924 .98 21.79 2.16 79.29 69.97 9.32 .91 22.71 2.22 81.64 71.66 9.97 CONCENTRATIONS : AREA-WGHTD.(NUH) = .011 , MASS-WGHTD. = .011			635.3	19.3	.0012			1.34		1.63	56.28	51.94	4.34		.0233
1733-15 1-7843 .32 26.84 2.55 97.13 81.57 15.56 1819-75 1.8519 .00 27.57 2.33 88.97 76.71 12.26 1689-92 1.7126 .00 26.31 2.10 80.47 70.74 9.73 1482.27 1.5924 .98 21.79 2.16 79.29 69.97 9.32 .91 22.71 2.22 81.64 71.66 9.97 CONCENTRATIONS : AREA-WGHTD.(NUH) = .011 , MASS-WGHTD. = .011	2		798.1	23.2	.0011			1.27		2.15	74.79	19.69	5.12		.0233
1889-92 1.7126 .00 27.57 2.33 88.97 76.71 12.26 1689-92 1.7126 .00 26.31 2.10 80.47 70.74 9.73 1482.27 1.5924 .98 21.79 2.16 79.29 69.97 9.32 .91 22.71 2.22 81.64 71.66 9.97 CONCENTRATIONS : AREA-WGHTD.(NUM) = .011 , MASS-WGHTD. = .011	3		973.7	28.5	.0010			.32		2.55	97.13	81.57	15.50		.0233
1482.27 1.5924 .98 21.79 2.16 77.29 69.97 9.73 .91 22.71 2.22 81.64 71.66 9.97 CONCENTRATIONS : AREA-WGHTD.(NUM) = .011 , MASS-WGHTD. = .011			1011.7	30.1	.0010			00.		2.33	88.97	16.71	12.26		.0233
1482.27 1.5924 .98 21.79 2.16 79.29 69.97 9.32 .91 22.71 2.22 81.64 71.66 9.97 CONCENTRATIONS : AREA-WGHTD. (NUM) = .011 , MASS-WGHTD. = .011	s		980.4	27.4	.0010			00.		2.10	80.47	70.74	9.73		.0233
1482.27 1.5924 .98 21.79 2.16 79.29 69.97 9.32 .91 2.22 81.64 71.66 9.97 CONCENTRATIONS : AREA-WGHTD.(NUM) = .011 , MASS-WGHTD. = .011															
CONCENTRATIONS : AREA-WGHTD. (NUM) = .011 , MASS-WGHTD. =	VERAGE	RASS-WEHTD	854.7	25.3				86.		2.16	19.29	71.66	9.32		.0233
	ALCULA	TED FIA RAT	105 FOR 1	BOVE	AVERAGE	CONCENTRA	TIONS : AR	EA-WGHID	CNUM) =		MASS-W	6н10. =	110.		

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\* SOX \*

#---- NO2 ---#

#/HR

#/1000# 10.55 10.56

#/1000# #/HR

\*---- NO ----\*

7.89

11.10

1.47 1.41

83.45

94.47

12.03 11.96

#---- C02 ---\* 24673. 24673. 3123. 3123. #/HR 15.8 16.1 #/1000# #/HR 2.00 #---- THC ---\* 7 .05 MASS EMISSIONS : AREA-WGHTD. 29

\* MID-POINT - NOT INCLUDED IN AVERAGES

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SCOTT ENVIRONMENTAL TECHNOLOGY INC. USAF TURBINE ENGINE EMISSIONS INVENTORY EDIT REPORT - MASS DATA CALCULATIONS

SET 1628-002-1077

USAF CONTRACT F08635-77-0216

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EDIT REPORT - MASS DATA CALCULATIONS		ENGINE TYPE : J57-59W BP : 29.70 IN.HG
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	SMOKE
1N.H6	SN WIA
81.9 AT IO =	NO2 PPM
ACTUAL F/A RATIO = .000	o d d
	N O A A
PT3 = 42.0 PS16	c02
PT3 = 0. #/	00 M
.00 IN.H20 AIR FLOW =	THC
.00 AIR	MASS FL.
P 52 =	RASS
, /HR	EXH.VEL F T/SEC
PT2 = .00 IN.H20	DENS.
FL04 :	P101
FUEL	TEMP.
.00 IN.H20	SAMPLE POINT .
F11 ::	. SAMPL
	0

(THRUST = 11580 # 1 \*\*\*\*\*

\*\*\*\*\* HODE 5 - TAKE-OFF

	. SAMPL	E POINT .		P101		EXH.VEL	MASS FL.	THC	00	203	XON	ON	N02	# SM	OKE
0	0 %	NO LOCATION	DE 6.F	PSIA	(RHO)	F T/SEC	(RHO+V)	PPMC	P P M		ьрм	N dd	PPH	SN W/A	4/4
	-				•	1									
	-		9. 169	22.1		1246-17	1.4843	58.38	281.94	2.48	16.88	10.37	6.51	67.00	.0233
0	2		173.6	27.4		1564.33	1.8490	68.84	389.11	3.14	21.53	12.00	8.87	62.00	.0233
	3		1012.6	32.1		1910.96	1.9887	80.69	394.14	3.70	26.48	15.31	11.17	65.50	.0233
			1025.0	34.7		1987-11	2.0880	30.18	350.89	3.40	30.28	19.78	10.50	75.00	.0233
0	. 5		0.	32.0		00.	0000	20.65	339.26	2.85	59.19	19.88	9.31	58.00	.0233
	AVERAGE	VERAGE : NUM.	876.4	28.5		1677.14	1.8525	56.62	354.02	3.18	23.79	14.53	9.26	67.37	.0233
0	30	MASS-WGHT	.0.					26.85	358.22	3.23	24.39	14.92	14.6		

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****		269.0
*		21.87 269.0
****		24.64
# THC		2.00 24.64
		AREA-WGHTD.

<sup>\*</sup> MID-POINT - NOT INCLUDED IN AVERAGES

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S N O X END

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SCOTT ENVIRONMENTAL TECHNOLOGY INC. USAF TURBINE ENGINE EMISSIONS INVENTORY EDIT REPORT - MASS DATA CALCULATIONS

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.05 TEST TYPE : 8 FUEL SULFUR : \* \* \* \* \* \* \* 2.00 HIC RATIONATMS : 9 FUEL : # 6 - JP-4 Z R SIARI \* \* \* \* \* \* IAT : 88.0 DEG.F ENGINE TYPE : JS7-59W BP : 29.70 IN.HG

PT5/7 = 32.2 IN.HG ACTUAL FIA RATIO = P13 = 16.7 PS16 D. #/HR .00 IN.H20 AIR FLOW = 200 # 1 \*\*\*\* P 52 = 1200. #/HR FUEL FLOW : 12 (THRUST = \*\*\*\*\* MODE 1 - IDLE .00 IN.H20 0000

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.0232 .0232 .0232 .0232 .0232 W/W \*--- SMOKE 8.50 00.9 5.00 00.0 S 7.33 7.26 6.88 6.25 NO2 . 85 1.08 MASS-WEHTD. = .00 ON d 7.10 8.13 7.80 .00 8.17 X O A 1.05 85. 00. 350.36 368.31 CALCULATED F/A RATIOS FOR ABOVE AVERAGE CONCENTRATIONS : AREA-WGHTD. (NUM) = .00 423.67 380.78 00 4 435.85 378.52 456.94 549.12 480.64 THC HASS FL. 0000 .0000 .0000 0000. .0000 000 00. F T/SEC EXH.VEL DENS. 00000 .0000 .0000 .0000 .0000 P101 PSIA 15.6 15.4 15.5 TEMP. DE G. F 00 MASS-WEHTD. \* SAMPLE POINT \* LOCATION AVERAGE : NUM.

\* SOX \* 2.54 \*--- NO2 ----#/1000# 2.12 .34 #/HE 0N ----#/1000m .28 2.88 #/HE \*----#/1000m 2.40 3461. \*--- 002 ---\* #/1000# #/HR 2884. 85.6 \*---- 03 ----\* #/HR #/1000# .00 61.87 \*--- THC ----#/HR \*/1000\* 51.56 MASS EMISSIONS MASS-WGHTD. 31

0

1.20

#/HR

. MID-POINT - NOT INCLUDED IN AVERAGES

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SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
EDIT REPORT - MASS DATA CALCULATIONS

SET 1628-002-1077

USAF CONTRACT F08635-77-0216

2 œ • C 0 N 1 TEST TYPE : B 2.00 HIC RATIONATMI : FUEL : # 6 - JP-4 1AT : 88.0 DEG.F

Z

.05 %

4570 # 1 \*\*\*\* (THRUST = \*\*\*\*\* HODE 3 - INTERMED.

ENGINE TYPE : J57-59W BP : 29.70 IN.HG

	P11 ::	.00 IN.H20	ī	FUEL FLOW	.00 IN	.H20 P	PS2 = .00	IN.H20 FLOW =	0.0	PT3 = 33.7 PS16 0. #/HR	PS16 ACT	ACTUAL F/A RATIO = .000	E 44.4	1N.H6	
	* SAMP	SAMPLE POINT .	TEMP.	PSIA	DENS.	EXH.VEL P	HASS FL.	THC	00 4	C02	XON	O d d	NO2 PPM	S	MOKE
									1					1	
	-		0.	17.1		00.	00000	22.10		1.05	19.84	14.79	5.05	28.00	.0232
	2		0.	19.3	00000	00.	00000	16.31		1.34	26.26	19.01	7.19	30.00	.0232
			0.	20.7		00.	00000	15.87		1.52	30.56	22.28	8.28	35.50	.0232
			0.	20.7		00.	.0000	9.34		1.36	27.41	20.69	6.72	43.00	.0232
0			0.	19.8		00.	00000	6.26		1.37	27.06	21.38	5.68	40.50	.0232
									1						
	AVERAGE	SE : NUM.	0.	19.4	00000	00.	0000	15.90		1.32	26.02	19.21	6.81	34.12	.0232
32		MASS-WGHTD						00.		00.	00.	00.	00.		

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0000 11 MASS-WGHID. . 900. CALCULATED F/A RATIOS FOR ABOVE AVERAGE CONCENTRATIONS : AREA-WGHTD. (NUM) =

	* NO2*	#/1000# #/HR	 18.55 1.69 6.58 3.90	00. 00.
	* NO	#/1000#	 4.76 18.55	00.
			6.44 25.13	
	* 002*			
		#/1000# #/HR	 8.52 33.2	0. 00.
	* JHL*		 1.37 5.35	00. 00.
MASS EMISSIONS :			AREA-WGHTD.	MASS-WGHTD.

. MID-POINT - NOT INCLUDED IN AVERAGES

REPORT DATE 10/27/77

USAF CONTRACT F08635-77-0216

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SCOTT ENVIRONMENTAL TECHNOLOGY INC. USAF TURBINE ENGINE EMISSIONS INVENTORY EDIT REPORT - MASS DATA CALCULATIONS

SET 1628-502-1077

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Z BC CONT \* \* \* \* \* \* \* \*

TEST TYPE : 8 FUEL SULFUR : 2.00 HIC RATIONATMI : FUEL : # 6 - JP-4 1AT : 88.0 DEG.F ENGINE TYPE : J57-59W 8P : 29.70 IN.HG

ACTUAL F/A RATIO = .000 PT3 = 42.1 PS16 AIR FLOW = 9720 # 3 \*\*\*\*\* PS2 = FUEL FLOW = 7900. #7HR (THRUST = \*\*\*\*\* MODE 4 - MILITARY .00 IN.H20 EPR = 0

.0232 .0232 .0232 .0232 .0232 .0232 A--- SMOKE 38.00 47.00 44.00 45.00 41.75 40.00 SN 3.36 11.45 10.73 8.04 N02 68.60 47.39 62.67 70.71 60.60 19.33 00. 50.75 66.69 82.16 71.68 68.64 1 00 NOX 2.06 1.63 5.04 2.32 00. 1.98 31.07 28.94 00. 29.75 23.73 28.88 33.41 D P P 3.72 2.58 1.94 .18 2.12 PPMC THC MASS FL. 00000 (RHO\*V) .0000 .0000 .0000 .0000 .0000 0000 EXH.VEL 00. FTISEC (RHO) .0000 DENS. .0000 .0000 .0000 .0000 PSIA 24.8 29.3 29.7 28.3 P101 DE G.F MASS-WGHTD. \* SAMPLE POINT \* LOCATION . NUM . AVERAGE 0 2

.000 MASS-WEHTD. = .010. CALCULATED F/A RATIOS FOR ABOVE AVERAGE CONCENTRATIONS : AREA-WGHID.INUM) = 33

0

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#/HE \*---- C05 ----24749. #/1000# 3133. 23.1 #/HR \*---- 00 ----\* #/1000# 26.2 #/HR \*--- JHC ---1/10001/1 HASS EMISSIONS : MASS-WEHTD.

0

\*---- NO ----\* #/1000# 00. 10.04 00. #/HE \*--- NOX ----89.82 #/1000# .00 11.37 0 0 .00 .00 .00

\* x05 \*

\*---- NO2 ----\*

#/HR

# /HE 10.52

#/1000# 1.33 000

19.29 # / HE

1.89 7.89

. MID-POINT - NOT INCLUDED IN AVERAGES

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SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
EDIT REPORT - MASS DATA CALCULATIONS

SET 1628-002-1077

REPORT DATE 10/27/77 USAF CONTRACT F08635-77-0216

. 05

FUEL SULFUR :

2.00

HIC RATIONATHI :

SN : P634817

9 ENGINE

FUEL : #

IAT : 88.0 DEG.F

ENGINE TYPE : J57-59# 8P : 29.70 IN.HG

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(THRUST = 13160 # ) \*\*\*\* \*\*\*\* HODE 5 - TAKE-OFF

.0232 .0232 .0232 .0232 .9232 ---- SMOKE 52.00 51.00 52.00 60.00 66.00 53.75 25 ACTUAL F/A RATIO = .000 9.29 11.59 9.34 6.37 61.6 27.07 00. 9.88 15.88 12.97 15.03 Mdd 22.16 27.47 16.25 31.41 36.41 24.32 X ON P13 = 43.4 PS16 3.76 3.45 3.59 00. D. #/HR .00 268.39 436.17 467.61 324.17 384.07 308.31 D b d d 23.79 AIR FLOW = 66.22 8.06 63.76 PPMC MASS FL. (RHO\*V) .0000 .0000 .0000 00000 .0000 .0000 - 25d EXH.VEL FT/SEC 888 .00 00. 12100. #/HR .00 IN.H20 DENS. ( RHO) .0000 .0000 .0000 0000 .0000 .0000 FUEL FLOW PSIA 58.9 P101 30.9 21.3 P12 = TEMP. DE6.F 00 MASS-MGHTD, .00 IN.H20 SAMPLE POINT . LOCATION AVERAGE 34

0000. MASS-MGHID. .017 CALCULATED F/A RATIOS FOR ABOVE AVERAGE CONCENTRATIONS : AREA-WGHTD.INUM) :

MASS EMISSIONS :

0

	#	* 31	73	*	)3	ON*	* X	JN*	*	N	* 20	. x0x .
	#/1000# #/HR	#/HR	#/1000# #/HR	#/HR	#/1000# #/HR	#/1000# #/HR	#/HR	#/1000# #/HR #/	#/HR	#/1000# #/HR	#/HR	34/1
	1										******	
AREA-WGHTD.	1.96	1.96 23.72	22.70	274.6	3097.	2.36	28.57	1.46	17.65	06.	16.01 06.	
MASS-WEHTD.	00.	00.	00.	0.	0.	00.	00.	.00.	20.	00.	000	

MID-POINT - NOT INCLUDED IN AVERAGES

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APPENDIX D
ENGINE TEST DATA

SCOTT ENVIRONMENTAL TECHNOLOGY INC. USAF TURBINE ENGINE EMISSIONS INVENTORY EDIT REPORT - ENGINE TEST DATA	ONMENTAL E ENGINE - ENGINE	TECHNOLOG EMISSIONS TEST DAT	TINVENTOR			S	SET 1628-002-1077	7101-200			Sn	REPO	REPORT DATE 10/27/77 USAF CONTRACT FO8635-77-0216	7-0216
SCOTT TEST NUMBER	NUMBER	4. TYPE B	89			TES	1 DATE :	TEST DATE : 9/ 6/77				ENG	ENGINE 2. NUMBER	MBER 1
ENGINE TYPE & MODEL : JS7-594 ENGINE SERIAL # : P630584 TOTAL ENGINE TIME : 0 HRS. PERFORMANCE TEST RESULTS : PASS	AL # : P6 E TIME :	: JS7-594 30584 0 HRS. ULTS : PASS	\$\$								<u> </u>	1 LOCATIO 1EST CEL 1EST CEL 5COTT	TEST LOCATION : LRAFE - ARK TEST CELL NUMBER : NG TEST CELL OPERATOR : WH SCOTT SUPERVISOR : FL	NS
AIR FLOW MEASUREMENT METHOD : NONE	ASUREMENT	ME THOD :	NONE									SMONS	SMOKE OPERATOR	00
TEST ENVIRONMENTAL CONDITIONS :	NHENTAL C	ONDITIONS	START	11	F INISH		SAMPL	SAMPLE LINE : 23 LPM FLOW RATE : 23 LPM	23 LPM			FUEL ANALYSI	FUEL ANALYSIS :	
TEST TIM	TEST TIME (MIL.TIME) :	HE) :	1350	16	1600		LEN	TEMPERATURE : 300 DEG.F LENGTH : 100 FT.	: 300 D	. 6.F		TYPE : JP-4	TYPE : JP-4	85.55
ATMOSPHE RELATIVE	ATMOSPHERIC PRESS. (IN. HG) RELATIVE HUMIDITY (2) :	3	29.58	\$	85.62								WI. T HYDROGEN :	14.30
191	16H H2076H DRY AIR) :	Y AIR) :	0.0100	0.0	0.0190							C H 2	C/H RAIIO-MASS:	5.98
TE ST HODE	RATED	THRUST	FUEL	SPEED	SPEED RPH	P71 C07P IN.H20	PT2 CITP IN.H20	PS2 CISP IN.H20	P13 C01P PS16	P15/P17 101P 1N.H6	112 CIII DE6.F	115/117 EG1 DEG.F	NOZZLE OPEN.	
10LE INTERNED. MILITARY TAKE-OFF	4.0 100 125	200 3750 9190 11400	1300 3800 7900 12000		6634 8579 9427 9517				17.1 29.3	32.6 44.8 68.2 82.0		600 775 1075 1100		

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SCOTT ENVIRONMENTAL TECHNOLOGY INC. USAF TURBINE ENGINE EMISSIONS INVENTORY EDIT REPORT - ENGINE TEST DATA	ENGINE E	MISSIONS TEST DAT	INVENTO	÷		v	SET 1628-D02-1077	7701-200			Sn	REP AF CONTRA	REPORT DATE 10/27/77 USAF CONTRACT F08635-77-0216	11-0216	
SCOTT TEST NUMBER	UMBER	5, TYPE B	80			IES	T DATE :	TEST GATE : 9/ 7/77				S	ENGINE 2, NUMBER	IMBER 2	
ENGINE TYPE & MODEL : J57-59W ENGINE SERIAL # : P634272 TOTAL ENGINE TIME : 0 HRS. PERFORMANCE TEST RESULTS : PASS	L P6.3 TIME :	34272 0 HRS. JLTS : PASS	\$5								H.	S1 LOCATI TEST CE TEST CE SCOTT	TEST LOCATION : LRAFB - ARK. TEST CELL NUMBER : NG TEST CELL OPERATOR : MM SCOTT SUPERVISOR : FL	A PRK	
AIR FLOW MEASUREMENT METHOD : NONE	SUREMENT	ME THOD :	NONE									INSTRUME	INSTRUMENT OPERATOR		
TEST ENVIRONMENTAL CONDITIONS :	MENTAL CO	NOITIONS					SAMPL	SAMPLE LINE :				FUEL A	S		
TEST TIME CMIL.TIMES	INIL.TIP	E) :	1410	1 91	1610		TEN	FLOW RATE : 23 LPM TEMPERATURE : 300 DEG.F	23 LPM : 300 D	E6.F		SAMPL	TYPE : JP-4		
INLET AIR TEMP. (DEG.F) :	TEMP. 1DE	6.F1 :	87.0		87.0		LEN	LENGTH : 100 FT.	. FT.			.I.	WI. & CARBON :	65.53	
RELATIVE HUMIDITY (2) :	HUMIDITY	9	29.70		63							::	WI. T HYDROGEN :	0.05	
INLE AIR HUMIDITY IGN H20/6m DRY	IGH HZOZEN DRY AIR) :	AIR) :	0.0176	0.0	0.0176							213	CZH RATIO-MASS:	5.85	
TEST HODE	RATED	THRUST.	FUEL	SPEED	N2 SPEED	6103	917 G119	PS2 CISP	P13	7197219 1019	211	115/117	NOZZLE OPEN.		
IDLE INTERMED.	700	250	1250 3900 7900		6405 8529 9457				28.8	32.5		600	-		
IAME OF	9	08611	16300		1866				0.24	4.18		9			

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HENTAL TECHNOLOGY INC. ENGINE EMISSIONS INVENTORY ENGINE TEST DATA	TENVIRONMENTAL TECHNOLOGY INC. TURBINE ENGINE EMISSIONS INVENIREPORT - ENGINE TEST DATA		IORY	
TECHNOLOG EMISSIONS E TEST DAT	ENGINE EMISSIONS - ENGINE TEST DAT	INC.	INVEN	
w	ENGINE - ENGINE	31.06Y	SNOI	DATA
w	ENGINE - ENGINE	FCHN	MISS	TEST
	ENVIRON TURBINE		ENGINE	ENGINE

THE SECTION

SET 1628-002-1077

7118 16

TEST DATE :

NEPORT DATE 10/27/77 USAF CONTRACT F08635-77-0216

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ENGINE TYPE & MODEL : J57-59k ENGINE SERIAL #: P634817 TOTAL ENGINE TIME : 1759 HRS. PERFORMANCE TEST RESULTS : PASS 6. TYPE 8 SCOTT TEST NUMBER

AIR FLOW MEASUREMENT METHOD : NONE

TEST ENVIRONMENTAL CONDITIONS :		
	START	FINI
TEST TIME (MIL.TIME) :	1315	150
INLET AIR TEMP. (DEG.F) :	88.0	88
	29.70	29.
RELATIVE HUMIDITY (1) :	55	5
INLET AIR HUMIDITY -		
16M H20/6M DRY AIR) : 0	0.0159	0.01

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5000 S

SAMPLE LINE: FLOW RATE: 23 LPM TEMPERATURE: 300 0EG.F LENGTH : 100 FT.

FUEL ANALYSIS : SAMPLE # :

TEST LOCATION: LRAFB - ARK.
TEST CELL NUMBER: NG
TEST CELL OPERATOR: WH
SCOTT SUPERVISOR: FL
INSTRUMENT OPERATOR: PR

ENGINE 2, NUMBER

SMOKE OPERATOR : AS

85.59 14.28 0.05 2.00 5.99 WI. T HYDROGEN : WI. T SULFUR : H/C RAIIO-AIM.: C/H RAIIO-MASS:

OPEN. NOZZLE

115/117 E61 575 766 1078 1090 C111 C111 DE6.F P15/P17 101P 32.2 67.9 3. 3. P13 C07P PS16 16.7 33.7 P52 C15P IN.H20 P12 C11P IN.H20 IN.H20 P11 C01P N2 SPEED RPM 6385 8500 9467 9627 NI SPEED RPH FUEL 1200 3900 7900 12100 200 4570 9720 13160 RATED 40 100 125 TEST MODE INTERMED. HIL ITARY TAKE-OFF TOLE

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ENGEDI STOP

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APPENDIX E
SMOKE EDIT REPORTS

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
EDIT REPORT - SAMPLE POINT SMOKE DATA

\*\* RUN

POINT	J.930	PRESS	201	VOLUME	#/SO.IN	SAMPLE REFL.	PAPER REFL.	S
		!					1	
101	80.0	14.8	nc.	.455	.0232	00.16	100.00	3.0
102	80.0	14.8	.50	.455	.0232	04.50	100.00	5.5
103	80.0	14.8	.50	.455	.0232	95.00	100.00	5.0
104	80.0	14.8	.50	.455	.0232	04.50	100.00	5.5
105	80.0	14.8	.50	.455	.0232	88.00	100.00	12.0
301	80.0	14.8	.50	.455	.0232	70.00	100.00	30.0
302	80.0	14.8	.50	.455	.0232	96.00	100.00	9.4
303	80.0	14.8	.50	.455	.0232	63.00	100.00	37.0
304	80.0	14.8	.50	.455	.0232	68.00	100.00	32.0
305	80.0	14.8	.50	.455	.0232	59.50	100.00	40.5
*01	80.0	14.8	.50	.455	.0232	59.50	100.00	40.
*05	80.0	14.8	.50	.455	.0232	57.00	100.00	43.6
•03	80.0	14.8	.50	.455	.0232	53.00	100.00	47.
•0•	80.0	14.8	• 50	.455	.0232	55.00	100.00	45.0
*05	80.0	14.8	.50	.455	.0232	52.00	100.00	48.
501	80.0	14.8	.50	.455	.0232	29.00	100.00	71.
505	80.0	14.8	.50	.455	.0232	35.00	100.00	65.0
503	80.0	14.8	.50	.455	.0232	36.00	100.00	0.49
504	80.0	14.8	.50	.455	.0232	35.50	100.00	64.5

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SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
EDIT REPORT - SAMPLE POINT SMOKE DATA

	** RUN	** 5							
	SAMPLE	TENP	PRESS	FLOW	VOLUME	4/4	SAMPLE	PAPER	S
•	POINT	DE6.F	PSIA	CFR	7	#/50.IN	REFL.	REFL.	
	101	78.0	14.8	.50	.455	.0233	88.00	100.00	12.00
	102	78.0	14.8	.50	.455	.0233	00.46	100.00	00.0
	103	78.0	14.8	.50	.455	.0233	93.00	100.00	7.00
	104	78.0	14.8	.50	.455	.0233	91.50	100.00	8.50
0	105	78.0	14.8	.50	.455	.0233	93.50	100.00	6.50
	301	78.0	14.8	.50	.455	.0233	81.00	100.00	19.00
-		78.0	14.8	.50	.455	.0233	72.00	100.00	28.00
0		78.0	14.8	.50	.455	.0233	67.00	100.00	33.00
		78.0	14.8	.50	.455	.0233	58.00	100.00	42.00
-		78.0	14.8	.50	.455	.0233	24.00	100.00	46.00
0		78.0	14.8	.50	.455	.0233	63.00	100.00	37.00
		78.0	14.8	.50	.455	.0233	56.50	100.00	43.50
		78.0	14.8	.50	455	.0233	54.00	100.00	46.00
0		78.0	14.8	• 50	.455	.0233	53.00	100.00	47.00
		78.0	14.8	.50	.455	.0233	05.64	100.00	50.50
		78.0	14.8	.50	.455	.0233	33.00	100.00	67.00
1		78.0	14.8	• 50	.455	.0233	38.00	100.00	62.00
		78.0	14.8	•\$0	.455	.0233	34.50	100.00	65.50
		78.0	14.8	• 50	.455	.0233	25.00	100.00	75.00
0		78.0	14.8	• 50	.455	.0233	45.00	100.00	58.00

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RUN	** 9							
SAMPLE	1EMP 0E6.F	PRESS	FLOW	VOLUME	#/SO.IN	SAMPLE REFL.	PAPER REFL.	S
					1000	1 0	100	
101	0.08		200	654	.0232	90.00	100.00	200
103	80.0		.50	.455	.0232	00.46	100.00	9
104	80.0	14.8	.50	.455	.0232	91.50	100.00	8
105	80.0	14.8	.50	.455	.0232	00.46	100.00	9
301	80.0	14.8	.50	.455	.0232	72.00	100.00	28.
302	80.0	14.8	.50	.455	.0232	70.00	100.00	30.0
303	80.0	14.8	.50	.455	.0232	64.50	100.00	35.
304	80.0	14.8	.50	.455	.0232	57.00	100.00	43.
308	80.0	14.8	.50	.455	.0232	59.50	100.00	40.
10.	80.0	14.8	• 50	.455	.0232	56.00	100.00	* * *
*05	80.0	14.8	.50	.455	.0232	00.09	100.00	*0*
+03	80.0	14.8	•50	.455	.0232	62.00	100.00	38.
*0*	80.0	14.8	.50	.455	.0232	55.00	100.00	45.
*05	80.0	14.8	.50	.455	.0232	53.00	100.00	47.
501	80.0	14.8	.50	.455	.0232	00-64	100.00	51.
205	80.0	14.8	.50	.455	.0232	48.00	100.00	52.
503	80.0	14.8	•50	.455	.0232	48.00	100.00	52.
504	80.0	14.8	.50	.455	.0232	40.00	100.00	.09
	-							

STOP SMOKIN

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APPENDIX F
CONCENTRATION EDIT REPORTS

SET 1628-002-1077	REFERENCE CURVE TABLES - NON-LINEAR
	REFERENCE
SCOTT ENVIRONMENTAL TECHNOLOGY INC.	USAF TURBINE ENGINE EMISSIONS INVENTORY CONCENTRATION EDIT REPORT
SCOTT ENVIR	USAF TURBIN

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OTT ENVIRONMENTAL TECHNOLOGY INC.	NTAL TECHN	TONS INVEN	100		SET 16.	SET 1628-002-1077			IISAF CO	REPORT DA	REPURT DATE 10/27/77
NCENTRATION EDIT REPORT	DIT REPORT			REFERENCE CURVE TABLES - NON-LINEAR INSTRUMENTS	JRVE TABLES	- NON -L IN	EAR INSTR	UMENTS		CAL. DA	CAL. DATE 7/22/77
		СО - нІ	•		MOT - 03	- NOT - 0	*		*	C 02	*
	AHAd	VOL 15	ANGLE		NE da	VOLTS	ANGLE		* VOL	VOL 15	ANGLE
RANGE 1 :				RANGE 1 :				RANGE 1 :			
	00.	00000	1.5705		00.	00000	1.5695		00.	00000	1.4161
	245.00	0990	1.5705		30.10	0040.	1.5694		1.46	1950	1.4600
	895.00	.2130	1.5706		60.30	.08 30	1.5694		3.20	.3500	1.4950
	1840.00	.3930	1.5706		78.40	.1060	1.5696		64.4	.4310	1.5145
	2400.00	0464.	1.5706		176.00	.2240	1.5696		60.9	.5110	1.5259
	4127.00	.7760	1.5707		245.00	.3000	1.5698		8.90	.6230	1.5357
	8100.00	1.2080	1.5707		614.00	.6100	1.5700		12.10	.7200	1.5432
	00-0096	1.3780	1.5707		895.00	.8340	1.5700		15.00	.7920	1.5487
RANGE 2 :				RANGE 2 :				RANGE 2 :			
	00.	00000	1.5703		00.	0000	1.5676		00.	0000	1.3459
	176.00	.0110	1.5705		30.10	0001.	1.5674		1.46	.2850	1.4101
	245.00	0060.	1.5705		60.30	.2060	1.5674		3.20	.5100	1.4605
	614.00	.2070	1.5705		78.40	.2640	1.5677		64.4	.6290	1.4886
	895.00	.3000	1.5705		176.00	.5570	1.5679		60.9	.7450	1.505.1
	1840.00	.5910	1.5705		245.00	.7460	1.5682		8.90	.9110	1.5193
	2400.00	.7460	1.5705		-1.00	-1.0000	0000		12.10	1.0520	1.5342
	4127.00	1.2320	1.5705		-1.00	-1.0000	0000		-1.00	-1.0000	0000
RANGE 3 :				RANGE 3 :				RANGE 3 :			
	00.	00000	1.5687		00.	00000	1.5611		00.	00000	1.3382
	30.10	.0510	1.5695		30.10	.3000	1.5606		1.46	.3320	1.3562
	176.00	.1840	1.5700		60.30	.6150	1.5611		3.20	0569*	1.3884
	245.00	.2300	1.5700		78.40	0611.	1.5624		64.4	.9020	1.4350
	614.00	.6030	1.5697		-1.00	-1.0000	0000		-1.00	-1.0000	0000
	895.00	.9610	1.5694		-1.00	-1.0000	0000		-1.00	-1.0000	0000

\*\* NOTES \*\*

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SPAN VOLTAGES ALREADY CORRECTED FOR ZERO GAS VOLTAGES.

A CONCENTRATION VALUE OF -1.0 INDICATES NO DATA.

J 57 59# # P63058 SET 1628-502-1077 1116 19 4.TYPE B SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
CONCENTRATION EDIT REPORT

USAF CONTRACT F08635-77-0216 LRAFB F1ELD TEST 1

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## CALIBRATION DATA FOR PERIOD 1355 TO 1425

	3	CO - HI		03	- 40	*	C 02
	START	FRICE	FND	STABI	FND	STARI	FND
RANGE 1	5100		2100	3,000	0 400	1000	2 1000 1
ZERO READING	0140		.0146	.0201	.0207	*010·	*010*
RANGE 2							
SPAN ABJ.FACTOR	.9829	6.	.9829	1.4195	1.4195	1.1958	1.1958
ZERO READING	1110.	0.	.0177	.0455	.0455	•0155	.0155
RANGE 3							
SPAN ADJ.FACTOR	.8936		.8936	0146.	0446.	1.0245	1.0245
ZERO READING	.0378	•	.0437	.1399	11571	1010.	2600.
LINEAR INSTRUMENTS :							
		THC	*	•	NOX		NO
	PERIOD		PERIOD	PERIOD	PERIOD	PERIOD	PERIOD
	START	END	0	START	END	STARI	END
					1 000		
SPAN AUJOFALIUN	1.1650	:	1.1650	7800°T	1.0082	8410.1	1.0148
ZEROES FOR RANGES							
	.1750	0.	-0702	.8502	.8387	8778	.4233
5.0	.0287	0.	0140	.1709	1602.	.0423	.1058
	9800*	0.	00000	• 0675	.0839	.0201	.0423
	.0012	0.	.0014	.0179	.0210	1010.	9010.
5 100.0 250.0	0045	0.	1000	.0082	.0084	0800.	.0042
	00000	0.	1000	.0034	.0021	11.00.	1100.
7 1000.0 2500.0	00000	0.	1000	6000.	.0008	6000.	+000·
8 5000.0 10000.0	0000	0.	00000	*0005	.0002	.0002	1000
SPAN GAS CONCENTRATIONS	110NS :						
THC-PPMC	NOX-PPM	NO-PPM	CO-HI-PPM	CO -LO-PPM	C02-1		
SPAN 1 24.48 SPAN 2 417.00	19.70	19.70	245.00	78.40	606.8	TOT.PRESS.FACT. 1.000.	.000. ADJ.

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	6 2 200 2 2	
SET 1628-002-1017	1110111	
	ENTORY CONT. TYPE	
	1561	
INC.	INVENTORY	
SCOTT ENVIRONMENTAL TECHNOLOGY INC.	CONCENTORING ENGINE EMISSIONS INVENTORY	
IENTAL	NGINE	
ENVIRON	CONCENTRATION FOLL BEDGG	
SCOTT	USAF	

SCOTT ENVIRONMENTAL TECHNOLOGY INC.	TECHNOL	DEY INC.				SET 16	SET 1628-002-1077	1101			BR COULD	REPORT DATE 10/21/71	10/2	1111
CONCENTRATION EDIT REPORT	E POR 1	7	-	EST 4.1	4.TYPE B	19	1116 19	7	J 57 59# # P63058	63058	LRAFB FIELD TEST 1	FIEL	FIELD TEST	1 1
	-	# JH	×	* XON	2	* 0N		+- IH-	-	#	* C02*	* - TE	*- TEMP 1F*	¥
	RNG	VOLTS	RNG	VOL 15	RNG	VOLTS	RNG	V 0L TS	RNG	VOL 15	RNG VOLTS	InduI		REFER
MODE-POINT : 1-01														
SPANZERO ADJ.	1.16	1.16 .0275	1.01	.1740	1.01	.0474	68.	.0383	1.42 .0	•0455	1.02 .0100			
TIME : 1357	5.00	1116.	10.00	.5508	10.00	-1104	2	.1948	2 .8	.8363	3 .1661		0.	17.1
PROBE POS.:		0196.		.5482		1001.		.1995	8.	.8427	.1688		0	8.91
11.68 IN.		.9421		.5478		.0936		6161.	8.	.8354	.1661			16.4
PRESS .: 14.53 PSIA		.9380		.5528		9460		.1964	80.0	.8204	.1688			15.8
		1696.		7486.		1640.		5641.		2118.	10/1-			0.01
AVERAGE :		6946.		.5568		₩660.		.1964	8.	.8364	.1681		0.	76.3
CONCENTRATION :	236.1	236.73 PPMC	5.5	ST PPHV	6.	AHA4 66.	193.7	193.77 PPMV	280.58 PPMV	NWd.	.72 % VOL		320.8 DE	0E6.F
MODE-POINT : 1-02														
SPANIZERO ADJ.	1.16	.0083	1.01	.1179	1.01	.0537	68.	.0389	1.42 .0	.0455	1.02 .0100			
11ME : 1400	10.00	.6819	10.00	.6651	10.00	.0728	3	.2419	2 1.0	1.0719	3 -2140		0,	74.6
PROBE POS.:		8707.		-6962		.0721		.2453	1.0	1.0804	.2109		0	12.8
9.73 IN.		99890		.6733		6990.		.2437	1.0	0160-1	-2102		0.	73.4
PRESS.: 15.26 PSIA		1669		.6768		.0653		.2455	1.0	1.0840	.2086		0.	12.2
		1101.		66590		.0662		.2435	1.0	1.0681	.2148		0.	71.7
AVERAGE :		.6953		.6742		.0687		.2440	1.0	1.0791	71117		0	12.9
CONCENTRATION :	347.6	347.65 PPMC	6.1	6-74 PPMV	9.	VH44 69.	261.5	261.53 PPMV	VH99 00.	AMA	.92 % VOL		381.2 DEG.F	6.5

DATA MARKED WITH AN ASTERISM (\*) NOT INCLUDED IN AVERAGE \*\* NOTE \*\*

CONCENTRATION EDIT REPORT  REG VOLTS FING VOLTS FOR VOLT	SPANZERO ADJ.  SPANZERO ADJ.  TIME: 1402 PRESS:: 15.65 PSIA  AVERAGE:  CONCENTRATION: 1-04  SPANZERO ADJ.  1.16 .0082 1.01 .180 8813 10.00 .835 8448 9317	01 .1802 00 .8365 00 .8498 .8459 .8459 .8459 .8459 .8459	01 .0575 .01 .0575 .00 .0741	CO-H1 -* VOLIS VOLIS 3 .3006 3 .3023 3 .3015	87 594 # P63058 * C0-L0 -* RNG VOLTS 	# CO2* RNG VOLTS 1.02 .0099	FIELD 168	1
### PROBLE DATA:  ### PROBLE POINT: 1-03  ***PRINTER AND.**  ***PROBLE DATA:  ***PROBLE DAT	### ### ### ### ### ### ### ### ### ##	. 8 4 5 9 8 8 5 9 8 4 8 9 8 8 8 9 8 8 8 9 8 8 9 8 9 8 9	01 .0575 .01 .0575 .00 .0741	RN6 VOLIS 	**** CO-LO -* RN6 VOLTS	**************************************	INPUT R	74.4 74.4 75.5
NOE-POINT: 1-03   SPANZEGO ADJ.   1.16   .0082   1.01   .1802   1.01   .0575   .89   .0392   .99   .0207   1.02   .0089   .9	### ### ### ### ### ### ### #### #### ####	. 8459 . 8459 . 8459 . 8459 . 8459 . 8459 . 8459 . 8459 . 8459	00 .0741 .00 .0741 .00 .0692	89 .0392 3 .3006 .3023 .3015	**************************************	RNG VOLTS	INPUT R	FFER 1
### WEENER POINT: 1-03  ### ### ### WEENER POINT: 1-03  ### ### ### ### ### ### ### #### ###	### ### ### ### ### ### ### ### ### ##	. 8365 1 . 8498 . 8499 . 8485 . 8749 . 8749 . 8511			1		α (	74.7 74.7
1.16	### ### ### ### ######################	.1802 .8365 .84698 .84659 .8749 .8749 .8511						74.9
SPANZERO ADJ.   1.16   .0082   1.01   .1802   1.01   .0575   .89   .0392   .99   .0207   1.02   .0099     SAPE DATA :   1.16   .0082   1.01   .1802   1.01   .0775   .89   .0323   .3586   .2584   .0     TAGE DATA :   1.16   .008   .813   10.00   .8365   10.00   .0741   3   .3006   1   .3536   3   .2584   .0     TAGE POS. :   1.565 PSIA   .8546   .8949   .0692   .3023   .3642   .25970   .0     PRESS. :   15.65 PSIA   .8546   .8949   .0665   .3066   .3642   .25970   .0     PRESS. :   15.65 PSIA   .8546   .8949   .9666   .3642   .3642   .2543   .0     PRESS. :   1.565 PSIA   .8949   .8949   .3649   .3649   .2549   .2543   .0     PRESS. :   1.566 PSIA   .8949   .8949   .3649   .3649   .2549   .2543   .0     PRESS. :   1.564 PMC   .851 PMC   .851 PMC   .85712 PMC   .311.64 PMC   .113   .401   .401.2 DE     SAMPLE DATA :   1.16   .0082   1.01   .0613   .894   .2549   .3842   .2843   .0     SAMPLE DATA :   1.16   .0082   1.01   .0613   .894   .2869   .3842   .2869   .2772   .0     PRESS. :   15.81 PSIA   .7391   .3749   .3769	SPANZERO ADJ. 1.16 .0082 1.01 SAMPLE DATA: 10.00 .8813 10.00 TIME: 1402 .8759 TAGE IN. 8563 PRESS: 15.65 PSIA .8546 .9317 AVERAGE: .8779 CONCENTRATION: 439.97 PPMC 8.51 MODE-POINT: 1-D4 SPANZERO ADJ. 1.16 .0082 1.01	.1802 .8365 .84698 .84659 .8749 .8749 .8511					c	74.7
SPAN/ZERO ADJ.         1.16         .0082         1.01         .1802         1.01         .0575         .89         .0392         .99         .0207         1.02         .0099           SAPPLE DATA:         1.16         .000         .8815         10.00         .8815         10.00         .8815         10.00         .8815         .0092         .3023         .3588         .2589         .0094           PROSE POS.:         .8853         .0092         .3023         .3642         .2570         .0           PRESS::         15.65 PSIA         .8853         .0092         .0092         .3642         .2570         .0           PRESS::         15.65 PSIA         .8853         .0004         .3015         .3642         .2570         .0           AVERAGE:         .8797         .8799         .8719         .8799         .8710         .0         .0           SAPPLE DATA:         .1.01         .0724         .1.01         .0613         .89         .0356         .99         .0089         .99         .0         .0           SAPPLE DATA:         .1.01         .0724         .1.01         .0613         .89         .0356         .99         .0         .99         .0	SPANZERO ADJ. 1.16 .0082 1.01 SAMPLE DATA: TIME : 1402 PROBE POS.: .8759 PRESS.: 15.65 PSIA .8546 .9317 AVERAGE : .8799 CONCENTRATION : .439.97 PPMC 8.51 RODE-POINT : 1-D4 SPANZERO ADJ. 1.16 .0082 1.01	. 1802 . 8459 . 8459 . 87498 . 87499 . 8511						74.7
TIME	TIME: 1402 PROBE POS.: 7.66 IN. 88563 PRESS.: 15.65 PSIA .8546 .9317 AVERAGE: 60NCENTRATION: 439.97 PPMC 8.51 NODE-POINT: 1-04 SPAN/ZERO ADJ. 1.16 .0082 1.01	. 8459 . 8459 . 8459 . 8749 . 8511		3 .3006 .3023 .3007	1 .3636 .3588 .3619	3 .2588		74.7
PROBE POS.:         .8759         .8498         .0692         .3323         .3586         .2544         .0           7.66 IN.         .8553         .8459         .0665         .3007         .3519         .2540         .0           7.66 IN.         .851         .8459         .0665         .3007         .3519         .2570         .0           AVERAGE:         .8749         .0666         .3055         .3642         .2623         .0           AVERAGE:         .8799         .8511         .0690         .30712         .3642         .2623         .0           AVERAGE:         .87997         PPMC         .8511         PPMV         .5712         PPMV         .311.64         PPMV         .1.13 ± VOL         461.2         .0           SAMPLE DATA:         .1.16         .0082         1.01         .0613         .89         .0396         .99         .0207         1.02         .0098           SAMPLE DATA:         .1.16         .0082         1.01         .063         .2963         .3440         .2849         .0         .0         .0         .0         .0         .0         .0         .0         .0         .0         .0         .0         .0         .0 <th>PROBE POS.:</th> <th>. 2</th> <th>.0688</th> <th>.3023</th> <th>.3619</th> <th></th> <th>n•</th> <th>74.9</th>	PROBE POS.:	. 2	.0688	.3023	.3619		n•	74.9
7-66 IN.   1856   1845   10688   1065   1307   13592   12548   1065   1065   13055   13642   12548   1065   13055   13642   12553   1065   13055   13642   13642   12653   1065   13055   13642   13642   12653   1065   13055   13642   13642   12653   10655   12642   126	7.66 IN8563 PRESS.: 15.65 PSIA .8546 .9317	, 12	.0668	.3007	.3619	.2644		79.5
AVERAGE:  AVERAG	AVERAGE:  AVERAGE:  CONCENTRATION:  #39.97 PPMC 8.51  MODE-POINT: 1-D4  SPAN/ZERO ADJ. 1.16 .0082 1.01	, 2	.0665	.3015		.2570		
AVERAGE:  AVERAG	AVERAGE:	. 12	.0666		.3592	.2548		15.1
AVERAGE: CONCENTRATION: 439-97 PPMC  8.51 PPMV  .69 PPMV  327.12 PPMV  311.64 PPMV  1.13 1 VOL 461.2 DE  CONCENTRATION: 439-97 PPMC  8.51 PPMV  .69 PPMV  327.12 PPMV  311.64 PPMV  1.13 1 VOL 461.2 DE  SPANZERO ADJ.  1.16 .0082  1.01 .0724  1.01 .0613  .89 .0396  .99 .0207  1.02 .0098  SAMPLE DATA: TIME: 1404  10.60 .0656  25.00 .3766  1.01 .0634  3 .2889  1 .3840  3 .2803  .0088  .3772  .0099  PRESS.: 15.81 PSIA  .3789  .3789  .3789  .3789  .3789  .3789  .3789  .3789  .3789  .3789  .3789  .3789  .3789  .2891  .3894  .2772  .0089  AVERAGE:  AVERAGE:  AVERAGE  .0080  .2914  .292.96 PPMV  1.22 1 VOL 525.0 DE	AVERAGE: .8799 CONCENTRATION: 439.97 PPMC 8.51 MODE-POINT: 1-D4 SPAN/ZERO ADJ. 1.16 .0082 1.01			.3055	.3642	.2623		14.7
CONCENTRATION: 439-97 PPMC 8-51 PPMV69 PPMV 327-12 PPMV 311-64 PPMV 1-13 % VOL 4611-2 DE MODE-POINT: 1-04  SAMPLE DATA: 1-04  SAMPLE DATA: 1-04  SAMPLE DATA: 1-04  SAMPLE DATA: 10-60656 25-00 .3766 10-60 .0634 3 .2889 1 .3440 3 .28030  \$1.31	CONCENTRATION: 439-97 PPHC 8-51 MODE-POINT: 1-04 SPAN/ZERO ADJ. 1-16 .0082 1-01		. 0690	.3021	.3616	.2595		15.2
SPANZERO ADJ.  SPANZERO ADJ.  1-16 .0082 1.01 .0724 1.01 .0613 .89 .0396 .99 .0207 1.02 .0098  SAMPLE DATA:  TIME : 1404  TIME : 1404  10.60 .6656 25.00 .3766 10.00 .0634 3 .2869 1 .3440 3 .2803  FROBE POSS:  4.34 IN.  4.55 .2903 .2869 .0  7.3749 .0559 .2959 .2959 .3394 .2772 .0  PRESS: 15.81 PSIA .3759 .0559 .2890 .3477 .2791 .0  AVERAGE:  6.6688 .3759 .0589 .2914 .315.43 PPMV 1.22 x VOL 525.0 DE CONCENTRATION: 348.32 PPMC 9.40 PPMV .59 PPMV 315.43 PPMV 1.22 x VOL 525.0 DE	MODE-POINT : 1-D4 SPANZERO ADJ- 1-16 -0082 1-01		VH44 64.	327.12 PPMV	311.64 PPMV	1.13 \$ VOL	461.2 DE	3.5
SAMPLE DATA:         1.16         .0082         1.01         .0613         .89         .0396         .99         .0207         1.02         .0098           SAMPLE DATA:         TIME: 1404         10.0         .6656         25.00         .3766         10.0         .0634         3.2889         1.3440         3.2803         .0         .0           PROBE POSS:         .7138         .3789         .3789         .0601         .29903         .3422         .2849         .0           PROBE POSS:         .734 IN.         .0559         .2795         .2959         .33594         .2772         .0           PRESS::         15.81 PSIA         .3789         .0550         .2930         .3477         .2791         .0           AVERAGE:         .0966         .3729         .0550         .2914         .315.43 PPHV         .2914         .322 x VOL         52801         .0	SPANZERO ADJ. 1-16 .0082 1-01							
TIME: 1404 10.65 25.00 .3766 10.00 .0634 3 .2889 1 .3440 3 .2803 .0  PROBE POS.:		.0724						
PSIA .3792 .0601 .2903 .3422 .2849 .0 .0 .0 .0 .0 .0 .2959 .3394 .2772 .0 .2772 .0 .2772 .0 .2772 .0 .2772 .0 .2772 .0 .2772 .0 .2772 .0 .2772 .0 .2772 .0 .27791 .0 .0 .27791 .0 .0 .27791 .0 .0 .27791 .0 .0 .27791 .0 .0 .27791 .0 .0 .27791 .0 .0 .27791 .0 .0 .27791 .0 .0 .27791 .0 .0 .27791 .0 .0 .27791 .0 .0 .27791 .0 .0 .27791 .0 .0 .0 .27791 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	10.00 .6656 25.00	.3766		3 .2889	1 .3440	3 .2803	0.	15.8
PSIA .2394 .2772 .0 .0592 .2959 .3394 .2772 .0 .0569 .2930 .3509 .2791 .0 .0550 .2890 .3477 .2791 .0 .0550 .2890 .3477 .2791 .0 .0550 .2890 .3499 .3499 .2801 .0 .0589 .2914 .3449 .3849 .2801 .0	.7138	.3792	.0601	.2903	.3422	.2849	0.	16.1
	6569.	.3749	.0592	.2959	.3394	.2772		17.6
	.7391	.3769	6950.	.2930	.3509	.2791		16.3
348.32 PPMC 9.40 PPMV 315.43 PPMV 292.96 PPMV 1.22 % VOL 525.0 DE		.3721	.0550	.2890	.3477	1612.		15.5
348-32 PPMC 9-40 PPMV .59 PPMV 315-43 PPMV 292-96 PPMV 1.22 % VOL 525-0 DE	9969•	.3759	.0589	.2914	3449	.2801	•	16.3
	348-32 PPMC 9-40	AMAN ON-6	VH44 65.	315.43 PPMV	292.96 PPMV	1.22 \$ VOL	525.0 DE	J. 9

\*\* NOTE \*\* DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE

SET 1628-002-1077 4 . TYPE B SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
CONCENTRATION EDIT REPORT

J 57 594 # P63058 1116 19

REPORT DATE 10/27/77 USAF CONTRACT FO8635-77-0216 LRAFB FIELD TEST 1

• •		RNG	* THC*		NOX*	* NO*	NO*	* CO-H1 -*	-H1 -*	* C0-L0 -*	# C02*	*- TEMP F* INPUT REFER	F*
	MODE-POINT : 1-05								!	1	1	!	
•	SPANZERO ADJ.	1.16	1.16 .0080	1.01	1210.	1.0.1	.0664	68.	00+0.	.99 .0207	1.02 .0098		
	TIME: 1406	10.00	.6814	25.00	.3732	10.00	.0531	m	.2707	1 .3388	3 .2713	0.0	74.7
	-10 IN.		9069.		.3698		.0532		2720	.3380	.2733		75.4
0	PRESS .: 15.55 PSIA		.7319		.3679		.0488		.2790	.3413	.2744	0.	15.2
(			.6800		.3684		.0531		.2691	.3380	.2748	9.9	75.2
) (	AVERAGE : CONCENTRATION :	347.0	347.09 PPMC	9.2	.3690 .22 PPHV	\$.	.0523	295.6	295.69 PPMV	.3384 285.90 PPMV	.2729 1.19 x VOL	.0	75.2 DE6.F
)	HODE-POINT : 3-01												
0	SPANZERO ADJ.	1.16	1.16 .1247	1.01	.0753	1.01	.0308	.89	9040.	1841. 26.	1.02 .0097		
48		1.00	.3059	25.00	.6615	25.00	.4626	m	0820	3 .5001	3 -2482	0.0	17.4
			.2472		66590		6994.		.0781	.5459	.2467	0.	78.2
(	PRESS.: 16.03 PSIA		.2311		.6663		. 4779		9410.	. 58 76	.2455	0.	78.3
			.2179		01 49.		. 4 743		.0753	.5624	.2446	0.	78.5
	AVERAGE :		.2530		.6625		. 4727		.0764	.5480	.2461	0.	78.0
)	CONCENTRATION :	12.6	12.65 PPMC	16.5	AWER 95.	11.8	A bbw	51.8	51.85 PPMV	53.62 PPMV	100 \$ 2001	423.9 DE6.F	DE 6 . F

DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE \*\* NOTE \*\*

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SET 1628-002-1077 1116 19 4.1YPE B SC011 1EST SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
CONCENTRATION EDIT REPORT

The state of the s

J 57 594 # P63058

USAF CONTRACT FOR635-77-0216 LRAFB FIELD TEST 1 REPORT DATE 10/21/17

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77.8 17.5 17.4 17.5 \*- TEMP. - F.-+
INPUT REFER DEG.F 00000 102 -- \$ 1.41 \$ VOL .3205 9600-9600. .3205 .3216 .3216 .3214 203 ---1.02 1.02 RNG .6101 .6129 VOL TS .5926 .1492 .6079 .6213 60.08 PFMV .0455 07-03 --\* 1.42 \$6. m RNG VOL 15 .0930 \*\*60. .0413 \*- [H-03 --\* .0410 .0893 .0931 .0911 .0922 67.29 PPHV 68. 68. RNG VOLTS .6383 .0321 .6399 .6337 6416 .6379 15.95 PPHV .0334 .6361 No 1.01 1.01 25.00 RNG VOL TS .0197 \*-- XON ---\* .6763 .9088 9320 .9273 23.11 PPHV .9231 .9301 .9242 1.01 RNG VOLTS .2011 .2088 .1121 \*-- THC ---.2436 10.44 PPMC .1870 .2030 .2091 1.16 1.16 1.00 RNG PRESS .: 18.16 PSIA HODE-POINT : 3-02 MODE-POINT : 3-03 CONCENTRATION : TIME : 1413 PROBE POS.: SPANIZERO ADJ. SPANIZERO ADJ. SAMPLE DATA : TIME : 1411 PROBE POS.: 9.84 IN. AVERAGE :

.7725 19.31 PPHV .2905 29.05 PPMV .2822 14.11 PPMC CONCENTRATION :

76.2 76.7 75.8 76.2

00000

.3855 .3803

.4071 .3978 .3936 .4126

1076

.7570

.1793

. 2949

.2488

.2573

PRESS .: 20.46 PSIA

7.68 IN.

1601.

.7761 .7646

25.00

.2883 -2905 .2879

.2909

100.00

.2613

1.00

.3869

75.3 76.0

. 3844 .3838

.4089

.1058 .1072 83.22 PPMV

656.1 DEG.F

1.70 \$ VOL

124.08 PPMV

DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE \*\* NOTE \*\*

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REPORT DATE 10/27/77		
	J 57 59# # P63058	
SET 1628-002-1077	1116 19	
	TEST 4.TYPE B	
Se INC.	-	
SCOTT ENVIRONMENTAL TECHNOLOGY INC.	CONCENTRATION EDIT REPORT	

		RNG VOLTS	HC*	RNG	NOX+	RNG VOLTS	vol.15	* CO-H1 -*	H1 -*	* C0-L0 -* RNG V0LTS	* C02* RNG V0L1S	*- TEMP F* INPUT REFER	REFER
	MODE-POINT : 3-04												
•	SPANZERO ADJ.	1.16	1.16 .1037	1.01	.0200	1.01	.0352	. 89	.0418	1.42 .0455	1.02 .0095		
•	TIME : 1415	1.00	.0534	100.00	1562.	25.00	.8468	3	.0878	2 .3156	3 ,3771	0.	76.1
	PROBE POS.:		.0670		.2944		.8428		1060.	.3073	3795	0.	76.5
	4.43 IN.		.0825		.2843		.8309		6060.	.2921	.3762	0.	77.3
	PRESS .: 20.88 PSIA		.0632		.2836		.8339		.0892	.3033	.3781	0.	77.3
			.0373		.2903		.8381		+260-	.2936	.3787	0.	17.5
(	- 1040		0000		3000		0.705	•					
)	AVERABL :		inen.		5067		.8385		1060.	.3024	.3/19		6.91
	CONCENTRATION :	3.04	3.04 PPMC	29.05	US PPHV	20.96	20.96 PPMV	65.17	65.17 PPMV	90.80 PPMV	1.67 \$ VOL	702.2	DE6.F
0	HODE-POINT : 3-05												
0	SPANZERO ADJ.	1.16	1.16 .1017	1.01	.0200	1.01	.0357	68.	6140.	1.42 .0455	1.02 .0095		
	TIME : 1416	1.00	1.00 .0107	100.00	.2660	25.00	8621.	2	.0844	2 .2699	3 .3484	0.	78.5
5	PROBE POS.:		.0015		.2643		.7922		.0835	.2513	0646.	0.	19.1
0			.0257		.2655		. 7887		.0855	.2437	.3469	0.	79.3
	PRESS .: 19.92 PSIA		0110		.2617		.1775		.0843	1642.	.3464	0.	19.4
(			0166		•5286		1747		.0815	.2212	.3466	0.	19.4
0						•		1			11111		
	AVERAGE :		• 00 20		.2634		. 7826		.0838	.2471	.3475		19.1
(	CONCENTRATION :	7.	.10 PPHC	26.34	34 PPHV	19.56	19.56 PPMV	58.94	58.94 PPMV	72.98 PPMV	1.53 \$ VOL	675.8	F6.F

DATA MARKED WITH AN ASTERISK 1+1 NOT INCLUDED IN AVERAGE \*\* NOTE \*\*

SCOTT ENVIRONMENTAL TECHNOLOGY INC. USAF TURBINE ENGINE EMISSIONS INVENTORY CONCENTRATION EDIT REPORT SCOTT	TECHNOL EMISSIO EPORT	NS INVE	NTORY SCOTT TE	NIORY SCOIL TEST 4, TYPE B	TYPE B	SET 1	SET 1628-002-1077 6/ 9/77		84 59 E	J 57 59# # P63058		REPOR CONTRACT	REPORT DATE 10/27/77 USAF CONTRACT F08635-77-0216 LRAFB FIELD TEST 1	17-0216 17-0216 1EST 1
	RNG	RNG VOLTS	RNG	NOX	B N G	RNG VOLTS	# CO	* C0-H1 -+ RNG VOLTS	RNG	* CO-LO -* RNG VOLTS	* C02* RNG VOLTS	C02*	*- TEMP F* INPUT REFER	REFER
HODE-POINT : 4-01														
SPANZERO ADJ.	::	1.16 .0828	1.01	•020•	1.61	1.61 .0105	8.	.0430	56.	.95 .1550	1.02	1.02 .0093		
TIME : 1421	1.00	1.000706	100.00	.4672	100.001	.4376	-	.0516	3	.1822	~	.3709	0.	78.2
PROBE POS.:		0652		.4610				-0512		.1740		.3657	0.	78.1
11.62 IN.		0942		.4579		.4372		.0526		.1740		.3653	0.	78.6
PRESS .: 18.84 PSIA		1072		.4663		.4375		.0503		.1624		.3631	0.	78.2
		1032		.4557		.4207		.0510		.1746		.3624	0.	78.1
AVERAGE :		0881		.4616		.4319		.0513		.1734		.3655	0.	78.2
CONCENTRATION :	0.	DNG DD	46.1	WALL OF PORV	43.	VANDO PLAF	30.	TO SE POWY	17 5	17 57 DPMV	1.6	104 1 17 1	9 304	3 330 0 309

•	SCOTT ENVIRONMENTAL TECHNOLOGY INC.			SET 1628-002-1077		REPORT DATE 10/27/77	
•	USAF TURBINE ENGINE EMISSIONS INVENTORY CONCENTRATION EDIT REPORT	TEST 4.TYPE B	TYPE B	1115 19	USAF CONTRAC	USAF CONTRACT FOR635-77-0216 LRAFB FIELD TEST 1	

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			3	O NOTTAGRE	ATA FOR PERI	CALIBRATION DATA FOR PERIOD 1425 TO 1511		
				LIBRALIUM U				
NON-LINEAR INSTRUMENTS	INSTRUM	ENTS :				REFERENCE C	REFERENCE CURVES CALIBRATION DATE :	
		03	- H1	*	3	* 07 - 03	*	203
		PERIOD		PER 100 END	PER10D START			PER10D END
RANGE 1							!	
ZERO READING	AC TOR	.9912		.9912	.9945	. 9945	1.0013	1.0013
RANGE 2	90134	0000		0000	1 4106			
ZERO READING	N6	1110.		0126	.0455	.0513	.0155	.0113
RANGE 3								
SPAN ADJ.FACTOR	ACTOR	.8936	•	.8936	0749.	04 40	1.0245	1.0245
ZERO READING	N6	.0437	•	.0107	.1571	1770.	2600.	100.
LINEAR INSTRUMENTS	TRUMENTS							
			THC	1	*	NOX XON	0N	1
		PERIOD	934	PERIOD	968100	PERIOD	PERIOD	PERIOD
				200	- A - C - C - C - C - C - C - C - C - C	ON 3		ON I
SPAN ADJ.FACTOR	AC TOR	1.1650		1.1650	1.0082	1.0082	1.0148	1.0148
ZEROES FOR RANGES	R RANGES							
	3.6	0103		3366				
		20100	•	5000	1000	2460.	6524.	2242.
	25.0	0700.	•	0168	.0839	9417.	. 0423	.0393
	100.0	*100.	,	.0041	.0210	.0215	9010	8600
5 100.0	250.0	1000.	•	.0020	.0084	.0086	-000	.0039
	1000.0	1000	•	*000*	.0021	.0021	1100-	0100.
8 5000.0	2500.0	10000	•	2000	.0008	6000.	,000°	P000.
SPAN GAS CONCENTRATIONS	ONCENTRA	. Swoll						
- 1	THC-PPMC	NOX-PPM	NO-PPM	CO-HI-PPR	CO-LO-PPM	C02-1		
SPAN 1	417.00	19.70		2400.00	78.40	6.6.		1.000. ADJ.
,	00.020						HERHOLOGPLE ITEL	

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SCOTT ENVIRONMENTAL TECHNOLOGY INC.			SET 1628-002-1077		REP	REPORT DATE 10.
USAF TURBINE ENGINE EMISSIONS INVENTORY	ENTORY				USAF CONTRACT FO8635-7	CI F08635-7
CONCENTRATION EDIT REPORT	SCOTT TEST 4.TYPE B	4.TYPE B	1116 19	J 57 594 # P63058 LRAFB	LRAFA	FIELD

SCOTT ENVIRONMENTAL TECHNOLOGY INC.	TECHNOL	OGY INC				SET 16	SET 1628-002-1077	1101				REPOR	REPORT DATE 10/27/77	111111
CONCENTRATION EDIT REPORT	EPORT	NS INVE	=	ST 4.TYPE 8	B 3dv1	,	1116 19	7	84 25 E	J 57 594 # P63058	LRAI	CONTRACT	USAF CONTRACT F08635-77-0216 LRAFB FIELD TEST 1	7-0216 EST 1
							1	1		•			9	•
	RNG	RNG VOLTS	RNG	VOL 15	RNG	RNG VOLTS	RNG	RNG VOLTS	RNG VOLTS	VOLTS	RNG VOLTS	VOL 15	INPUT REFER	REFER
MODE-POINT : 4-02														
SPANZERO ADJ.	1.16	1.16 .0746	1.01	.0210	1.01	.0106	.89	.0429	56.	.1550	1.02	1600.		
TIME : 1426	1.00	1.00 .2090	100.00	.6538	100.001	.5974	2	.0520	2	.1985	*	0696	0.	76.4
PROBE POS.:		.2132		.6625		1665.		.0534		.1937		.4803	0.	76.6
9.78 IN.		.2069		+6554		.5928		.0555		.2130		.4737	0.	17.2
PRESS.: 23.34 PSIA		.2184		.6521		.5871		.0548		.2250		.4768	0.	17.1
		.2105		.6505		.5970		.0553		.2586		.4831	0.	17.4
		.2148		1849.		.5879		.0571		.2628		1111	0.	17.3
AVERAGE :		.2121		.6538		.5936		1050.		.2253		.4801	0.	17.0
CONCENTRATION :	10.6	10.61 PPMC	65.3	NHA 8	59.3	59.36 PPMV	32.9	32.98 PPHV	22.1	22.73 PPHV	2.1	2.14 x VOL	786.3	786.3 DEG.F
MODE-POJNT : 4-03														
SPANZERO ADJ.	1.16	1.16 .0812	1.01	.0210	1.01	1.01 .0105	.89	.89 .0416	.95	6151. 26.	1.02	0600.		
TIME : 1428	1.00	.1536	1.00 .1536 100.00	0461.	100.00	.6860	3	.0654	M	0062.	~	.5610	0.	17.3
PROBE POS.:		1115		. 7831		.6765		.0651		-2805		.5559	0.	17.4

DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE \*\* NOTE \*\*

77.3

.5610 .5559 .5602 .5586 .5586

.2900 .2802 .2860 .2869 .3003

.0654 .0662 .0662 .0658

.6860 .6765 .7005 .6931

.7940 .7831 .8145 .7922 .8002

.1536 .1775 .1807 .0863

7.69 IN. PRESS.: 28.56 PSIA

0

77.2 DE 6.F

2.51 1 VOL

.28.99 PPMV

41.99 PPMV

9689. VM44 86.89

79.68 PPHV

.1559 7.80 PPMC

AVERAGE : CONCENTRATION :

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SCOTT ENVIRONMENTAL TECHNOLOGY INC. USAF TURBINE ENGINE EMISSIONS INVENTORY CONCENTRATION EDIT REPORT SCOTT TEST 4,TYPE B 6/ 9/77 J 57 59W # F63058 LRAFB
TEST 4.TYPE B
SCOTT ENVIRONMENTAL TECHNOLO USAF TURBINE ENGINE EMISSION CONCENTRATION EDIT REPORT

		RNG	RNG VOLTS	RNG VOLTS	VOL 15	RNG	RNG VOLTS	RNG VOLTS	-H1 -+	FN6 VOLTS	-L0 -*	RNG VOLTS	* 20 NOLTS	*- TEMP F* INPUT REFER	REFER
	MODE-POINT : 4-04														
,	SPANZERO ADJ.	1.16	9960.	1.01	.0210	1.01	.0105	.89	.0386	. 56.	.1446	1.02	1 800.		
	TIME : 1432 PROBE POS.:	1.00	.1564	100.00	.8004	100.00	.6793	m	.0674	~	3368	m	.5360	0.0	4.17
	4.39 IN. PRESS.: 30.30 PSIA		.1573		.7959		6889		.0685		.3366		.5350 .5320 .5271	9999	8.77
0 (	AVERAGE : CONCENTRATION :	7.8	.1575 7.87 PPHC	79.2	.7923 9.23 PPHV	0.89	VM99 PD-89	43.9	.0677 43.91 PPMV	.3302 33.03 PPMV	.3302 PPHV	2.37	.5311 2.37 \$ VOL	1002.3	77.5 DEG.F
0	HODE-POINT : 4-05														
0	SPANZERO ADJ.	1.16	.1118	1.01	.0211	1.01	.0104	68.	.0356	. 36.	.1373	1.02	.0085		
54		1.00	.1294	100.00	-6692	100-00	.5751	m	.0694	m	. 4286	~	.4588	0.00	71.5
0	PRESS.: 27.25 PSIA		.1334		.6682		.5761		.0669		3929		.4612		76.8
0	AVERAGE : CONCENTRATION :	6.2	.1250 6.25 PPHC	67.2	.6721 67.21 PPHV	51.7	27.72 VH99 27.72	***	.0683	39.81 PPHV	.4017	2.05	2.05 \$ VOL	9.956	77.1 DE6.F
0															
0															
0															

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
CONCENTRATION EDIT REPORT

SET 1628-002-1077

1116 19

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4 . TYPE

J 57 594 # P63058

USAF CONTRACT FO8635-77-0216 LRAFB FIELD TEST 1

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	NON-LINEAR INSTRUMENTS	ENTS :				REFERENCE CL	REFERENCE CURVES CALTBRATION DATE :	DATE : 7/22/77	111
		03	H	•	03	* 07 - 0	***************************************	- 002	-
		PERIOD	3d	PERIOD	PERIOD	PERIOD	PERIOD	PERIOD	go
		START	3	GNO	START	GNJ	START	END	
RANGE 1									1
SPAN ADJ.FACTOR	I-FACTOR	.9912	•	. 9912	5466.	5466.	1.0013	1.0013	13
ZERO READING	DING	9410.		9110	.0207	.0207	,010.		.0
RANGE 2									
SPAN ADJ.FACTOR	I.F AC TOR	.9829		1.0275	1.4195	1.4337	1.1958	1.0982	82
ZERO READING	DING	•0126	•	.0126	.0513	0002	.0113	.0113	13
RANGE 3									
SPAN ADJ.FACTOR	I.FACTOR	.8936	•	.8885	0146.	.8936	1.0245	-	11
ZERO READING	DING	1010.		•0026	1110.	.0051	.0062		6500.
			37.1						
		PERIOD		PER10D END	PERIOD		PERIOD	2	00
SPAN ADJ.FACTOR	J.F ACTOR	1.1650	1.	.9578	1.0082	1.2760	1.0148	1.1948	1 00
ZEROES F	ZEROES FOR RANGES								
1.0	2.5	-2385	•	2655	.8593	.9788	.3933		2939
5.0	-	1000.	•	.0483	.2148	.2447	.0983		.0735
10.01		.0168	•	1610.	.0859	-0952	.0393		53
. 50.0		1+00.	•	1+00-	.0215	.0251	8600.		6600
2 100.0		.0020	•	-0023	9800.	8600.	•0039		.0029
		*000°	•	50003	.0021	.0024	0100.		1000.
7 1000.0		*0005	•	-0000	60000	0100.	*000°		103
0.0008	0.00001	0000		0000	*0005	-0002	1000		101
SPAN GAS	SPAN GAS CONCENTRATIONS	TIONS :							
	THC-PPHC	NOX-PPM	NO-PPH	C0-H1-PPH	Mdd-07-03	C02-1			
SPAN 1	24.48	19.70	19.70	245.00	78.40	64.4	TOT.PRESS.FACT. 1.000, AUJ. SAMPLE PROBE TYPE - SP	1.000 ADJ.	00.

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DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE \*\* NOTE \*\*

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
CONCENTRATION EDIT REPORT
SCOTT TEST 4.TYPE B 67 9.777

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# #65 15 C 1116 19

USAF C. 1594 # P63058 LRAFB

REPORT DATE 10/27/77
USAF CONTRACT F08635-77-0216
LRAFB F1ELD TEST 1

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CONCENTRATION EDIT REPORT	EPORT		SC011 1E	TEST 4, TYPE 8	APE 8	19	1116 19	7	27 594	J 57 594 # P63058	LRAFB	œ	FIELD TEST 1	1 153
	RNG VOLTS	HC+	N N N N N N N N N N N N N N N N N N N	NOX*	RNG VOLTS	v 01.15	RN6	RNG VOLTS	PNG	* CO-LO -* RNG VOLTS	* C02* RNG VOLTS	VOLTS	1 TEMP. F	REFER
MODE -POINT : 5-01														
SPANZERO ADJ.	1.15 .2407	.2407	1.03	.0218	1.03	8600.	8.	.0103	**	+110° +6.	1.04	29000		
TIME : 1513	1.00	.1206	100.00	.6628	100.00	.3068	3	.2090	3	*1965.	3	.5380	0.	19.1
PROBE POS.:		.0757		.6663		.3177		.2191		.6565*		.5403	0.	78.8
11.56 IN.		.0007		.6471		.3012		.2351		1.0982#		.5373	0.	78.5
PRESS.: 21.28 PSIA		.0189		9649.		.3054		.2350		1.4839*		.5327	0.	18.2
AVERAGE :		0690		.6564		. 3078		.2245		.0000		.5371	.87 0.	78.6
CONCENTRATION :	3.45	3.45 PPMC	9.59	65.64 PPHV	30.7	30.78 PPMV	237.9	237.95 PPMV	0.	AMAG DD.	2.40	10 A 2	121.8	0E6.F
MODE-POINT : 5-02														
SPANZERO ADJ.	1.15 .0413	.0413	1.03	1980.	1.03	1.03 .0376	.89	.89 .0103	1.42	1.42 .0473	1.04	1.04 .0062		
TIME : 1513	5.00	.3671	25.00	.7809	25.00	.3409	3	.2922	2	2 1.2538*	~	89999	0.	15.2
PROBE POS.:		.3737		.7522		. 3334		.2992		1.9242*		.6515	0.	17.1
9.87 IN.		.3941		.7573		.3186		.3082		.9072*		.6520	0.	17.8
PRESS .: 26.30 PSIA		.3922		.7528		.3335		.3035		.9684.		-6602	0.	16.1
	•													
CONCENTRATION :	95.44 PPMC	.3818 PPMC	19-0	.7608	6.3	.3316 8-29 PPMV	125.6	.3008 275-68 PPMV	0.	00000	3.00	3.00 2 401	884.4 DEG.F	76.7
					***		2000							

\*\* NOTE \*\* DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE

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SET 1628-002-1077 1116 19 4. TYPE B SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
CONCENTRATION EDIT REPORT

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J 57 594 # P63058

USAF CONTRACT FO8635-77-0216 LRAFB

				,									
	RNG VOLTS	40LTS	RNG	VOL 15	RNS VOLTS	VOL TS	RNG VOLTS	VOL 15	RNG VOLTS	•	RNG VOLTS		INPUT REFER
HODE-POINT : 5-03													
SPANZERO ADJ.	1710. 01.1	1111	1.09	•0220	1.07	.0330	9.	1600	. 99 .0207	1.07	1900- 10	_	
TIME : 1518	10.00		100.00	.2416	25.00	.3761	m	.3331	1 .683	• 1	3 .763	•	11.
PROBE POS.:	7.7	.1880		.2418		.4060		.3251	.847	* *	.768	2	77.
PRESS.: 32.47 PSIA		.2221		.2522		.3895		.3338	.9980*	* *	.7740	0-	76.6
AVERAGE : CONCENTRATION :	.2269 113.44 PPHC	.2269	24.51	.2451 24.51 PPNV	8.6	.3957 VH99 98.9	358.7	.3316 358.72 PPMV	0000°		3.63 \$ 000	0, 1032.0	1 0
MODE-POINT : 5-04													
SPANZERO ADJ.	1.08 .0180	01180	=	.0229	1.09	.0314	.89	.0087	.99 .0207	1.08	1900 - 80		
	10.00 .1768	1768	100.00	.2693	25.00	.5417	٣	1982	1 .286	* 9	3 .735		78.0
4.39 IN.	: 7	.1255		.2830		. 5558		.2532	.739	* * 5	.738		78.
PRESS.: .00 PSIA		.1176		2713		.5477		.2650	*6448*	* *	.7290		78.8
AVERAGE : CONCENTRATION :	.1299 64.95 PPMC	.1299 5 PPHC	27.46	.46 PPMV	13.85	. 5540 13.85 PPMV	270.0	270.09 PPMV	VM44 00.		3.42 \$ 101	0. 1041.40	. 90

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DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE \*\* NOTE \*\*

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		-
SET 1628-002-1011		REFERENCE CURVE TABLES - NON-LINEAR I
		CURVE
		REFERENCE
INC.	INVENTORY	
TECHNOLOGY	USAF TURBINE ENGINE EMISSIONS INVENTORY	EPORT
MENTAL	ENGINE	EDIT R
SCOTT ENVIRONMENTAL	URB INE	CONCENTRATION EDIT REPORT
11038	USAF	CONCEN

### CO - HI	SCOTT ENVIRONMENTAL TECHNOLOGY INC.	NTAL TECH	NOLOGY INC.	9		SET 16.	SET 1628-002-1017	11		200	REPORT DA	REPORT DATE 18/21/17
## PPNV VOLTS ANGE   PPNV VOLTS ANGE   1.500	ONCENTRATION E	DIT REPOR	T INTE		REFERENCE CUR	VE TABLES	- NON-LIN	WEAR INSTR	SUMENTS	D. FASO	CAL. DA	VIE 7/22/17
PPHW VOLTS   NAGE   1.00   1.50   1				•	•	73	- 101 - 0	*			C02	*
NAMER 2   1.00   1.5705   1.5705   1.5705   1.5695   1.5695   1.5695   1.5695   1.5695   1.5695   1.5695   1.5950   1.		PPHV	VOL TS	ANGLE		ррич	VOLTS	ANGLE		101 2	VOL TS	ANGLE
245.00 .0050 1.5705 .000 1.5694 1.00 .0000 1.000 1.5694 2.00 .0000 1.5694 1.00 1.0000 1.5694 1.00 1.0000 1.5694 1.00 1.0000 1.5694 1.00 1.0000 1.5694 1.00 1.0000 1.5694 1.00 1.0000 1.5694 1.00 1.500									-			
### 245.00 .0650 1.5705 60.30 .0830 1.5894 1.46 .1950 1.5894 1.46 .1950 1.5894 1.46 .1950 1.5894 1.46 .1950 1.5894 1.46 .1950 1.5994 1.5706 1.5706 1.5896 1.5896 1.5896 1.5896 1.5896 1.5896 1.5994 1.		00.		1.5705		00.	00000	1.5695		00.	00000	1.4161
B95.00		245.00		1.5705		30.10	00 40.	1.5694		1.46	.1950	1.4600
1840.00		895.00		1.5706		60.30	.0830	1.5694		3.20	.3500	1.4950
## 176.00		1840.00		1.5706		78.40	.1060	1.5696		64.4	.4310	1.5145
#127-00		2400.00		1.5706		176.00	.2240	1.5696		60.9	.5110	1.5259
### ### ### ### ### ### ### ### ### ##		4127.00		1.5707		245.00	.3000	1.5698		8.90	.6230	1.5357
9600-07 1.3780 1.5707 895-00 .8340 1.5700 15.670 15.00 .7920  176-00 .0710 1.5705 60.30 .2640 1.5674 3.20 .5850 1.5674 2.2850 1.5705 1.5705 1.5674 1.5674 3.20 .5850 1.5705 1.5705 1.5674 1.5674 3.20 .7900 1.5705 1.5705 1.5674 1.5677 4.49 .6290 1.5705 1.5705 1.5705 1.5679 1.5679 1.5679 1.5679 1.5705 1.57		8100.00		1.5707		614.00	0019.	1.5700		12.10	.7200	1.5432
176.00		9600-00		1.5707		895.00	.8340	1.5700		15.00	. 7920	1.5487
176.00   .0000   1.5703   .000   .0000   1.5674   .000   .0000   .26504					RANGE 2 :							
176.00		00.		1.5703		00.	0000.	1.5676		00.	00000	1.3459
245.00 .0990 1.5705 60.30 .2066 1.5674 3.20 .5100 18.49 .6290 18.500 .2070 1.5705 17.600 .2040 1.5677 4.49 .6290 18.500 .2070 1.5705 17.600 1.5705 1.5679 6.0290 17.500 1.5705 1.5679 6.0290 1.5705 1.5679 6.0290 1.5000 1.5000 1.5705 1.5705 1.5679 6.030 1.5606 1.5000 1.5000 1.5687 1.5705 1.5695 1.5000 1.5687 1.5000 1.5687 1.5000 1.5687 1.5000 1.5687 1.5606 1.5606 1.5606 1.5606 1.5600 1.5697 1.5600 1.5		176.00		1.5705		30.10	.1000	1.5674		1.46	.2850	1.4101
## 619-00		245.00		1.5705		60.30	.2060	1.5674		3.20	.5100	1.4605
895.00 .3000 1.5705 176.00 .5570 1.5679 6.09 .7450 .7450 245.00 .7460 1.5682 8.90 .9110 .245.00 .7460 1.5705 .7460 1.5705 .1.000 .1.0000 .0000 1.2320 1.5705 .1.000 .1.0000 1.5611 8ANGE 3:		614.00		1.5705		78.40	.2640	1.5677		4.49	06290	1.4886
### ### ## ### ### ### ### ### ### ###		895.00		1.5705		176.00	.5570	1.5679		60.9	.7450	1.5051
2400.00 .7460 1.5705 -1.00 -1.0000 .0000 12.10 1.0520 -1.0000 .0000 1.2320 1.5705 -1.000 -1.0000 .0000 1.5607 -1.0000 -1.0000 1.5611 .5695 1.46 .3320 1.5695 1.5695 1.5697 1.5611 1.5624 4.49 .9020 614.00 .6030 1.5697 -1.00 -1.0000 .0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000		1840.00		1.5705		245.00	.7460	1.5682		8.90	.9110	1.5193
#127.00 1.2320 1.5705 -1.00 -1.0000 .0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.5695 -1.0000 -1.5695 -1.5695 -1.5695 -1.5695 -1.5695 -1.0000 -1.5696 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000 -1.0000		2*00.00		1.5705		-1.00	-1.0000	0000.		12.10	1.0520	1.5342
300 .0000 1.568700 .0000 1.561100 .0000 1.5606 1.46 .3320 1.56000000 1.5606 1.5606 1.5606 1.5606 1.5606 1.5700 1.5700 1.5700 1.5611 1.5611 1.5700 1.5700 1.5700 1.5611 1.5611 1.5700 1.5700 1.5700 1.5624 1.5624 1.0000 1.5697 1.5624 1.0000 1.5697 1.0000 1.5624 1.0000 1.5697 1.0000 1.5694 1.0000 1.5694 1.0000 1.5694 1.0000 1.5694 1.0000 1.5694	a	4127.00		1.5705		-1.00	-1-0000	0000		-1.00	-1.0000	0000
.000     1.5687     .00     .0000     1.5611     .00     .0000       .0510     1.5695     30.10     .3000     1.5606     1.46     .3320       .1840     1.5700     60.30     .6150     1.5611     3.20     .6950       .2300     1.5700     78.40     .7790     1.5624     4.49     .9020       .6030     1.5697     -1.00     -1.0000     -1.0000     -1.0000       .9610     1.5694     -1.00     -1.0000     -1.0000	-				RANGE 3 :				~			
.0510     1.5695     3C.10     .3000     1.5606     1.46     .3320       .1840     1.5700     60.30     .6150     1.5611     3.20     .6950       .2300     1.5700     78.40     .7790     1.5624     4.49     .9020       .6030     1.5697     -1.00     -1.0000     -1.0000     -1.0000       .9610     1.5694     -1.00     -1.0000     -1.0000		00.		1.5687		00.	.0000	1.5611		00.	00000	1.3382
.230 1.5700 60.30 .6150 1.5611 3.20 .6950 .6950 .2300 1.5700 1.5624 4.49 .9020 .9020 .6030 1.5697 -1.00 -1.0000 .0000 -1.0000 .1.5694 .1.0000 .0000 .1.0000 .1.0000 .1.0000 .1.0000 .0000		30.10		1.5695		30.10	.3000	1.5606		1.46	.3320	1.3562
.2300 1.5700 78.40 .7790 1.5624 4.49 .9020 -1.0030 1.5697 -1.00 -1.0030 .0000 -1.0030		176.00		1.5700		60.30	.6150	1.5611		3.20	0560.	1.3884
.6030 1.5697 -1.00 -1.0000 .0000 -1.00		245.00		1.5700		78.40	0611.	1.5624		64.4	.9020	1.4350
.9610 1.5694 -1.00 -1.0000 .0000 -1.0000 -1.0000		614.00		1.5697		-1.00	-1.0000	0000		-1.00	-1.0000	0000
		895.00		1.5694		-1.00	-1.0000	0000		-1.00	-1.0000	0000

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\*\* NOTES \*\*

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SPAN VOLTAGES ALREADY CORRECTED FOR ZERO GAS VOLTAGES.

A CONCENTRATION VALUE OF -1.0 INDICATES NO DATA.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
CONCENTRATION EDIT REPORT

NON-LINEAR INSTRUMENTS :

Land Street Contract

SET 1628-002-1077

# P63427

157 59W

1116 11

 $\alpha$ 

STYPE

USAF CONTRACT FO8635-77-0216 LRAFB FIELD TEST 2

0

## CALIBRATION DATA FOR PERIOD 1359 TO 1635

REFERENCE CURVES CALIBRATION DATE : 7/22/77

		PERIOD -	- HI	PER100	- L0*	* C02	PER 100
		START		START	END	START	END
RANGE 1 SPAN ABJ.FACTOR	108	6666	1.0019	1,0571	.9429	1.0299	1.1732
ZERO READING		9610.	.0236	.0178	.0307	0110	0110
RANGE 2 SPAN ADJ.FACTOR	T0R	1.0069	.9629	1.0570	.8621	1.0293	1.1921
ZERO READING		.0249	6500	.0427	.0427	.0164	.0082
RANGE 3 SPAN ADJ.FACTOR	TOR	.8388	.8138	1.0623	.1132	1.0320	1.2898
ZERO READING		•0616	•0655	.1302	0+81.	8600.	.0065
LINEAR INSTRUMENTS :	UMENTS :						
			THC	*	i	0N	*
		PERIOD	PERIOD	PERIOD	FERIOD	PERIOD	PERIOD
SPAN ADJ.FACTOR	TOR	.9502	.8216	1.1749	1.2782	1.1588	1.1902
ZEROES FOR RANGES	ANGE S X/NO!						
1 1.0	2.5	-2065	•2006	.7890	1.1254	.4106	.2988
2 5.0	10.0	.0377	.0390	.1836	.2741	8440.	.0515
3 10.0	25.0	.0110	.0150	.0733	.1128	.0220	.0245
	100.0	1100.	.0026	1610.	.0288	.0105	.0111
	250.0	\$100.	7100.	0600.	.0113	•0082	.0030
	0.0001	.0003	.0003	•0050	.0028	0100-	1000.
	2500.0	1000	2000-	.0008	.0011	*000°	.0003
8 5000.0 10(	0.00001	0000	0000.	•0005	•0003	1000.	1000.

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SPAN GAS CONCENTRATIONS :

	JHC-PPHC	NOX-PPM	MO-DAW	M NO-PPM CO-HI-PPM CO-LO-PPM CO2-1	CO-10-PPH	£05-1	
					11111111		
I	24.48	19.70	19.70	245.00	78.40	64.4	
-	417.00	06.06	00.06	2400.00	245.00	8.90	SAMPLE PROBE TYPE - SP
	4620.00						THERMOCOUPLE TYPE - K

00.

DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE \*\* NOTE \*\*

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	RNG	RNG VOLTS	RNG	NOX*	RNG VOLTS	v 0LTS	* CO-HI -*	H1 -*	# CO-LO -*	-L0 -*	RNG VOLTS	INPUT	INPUT REFER
HODE-POINT : 1-01													
SPANZERO ADJ.	\$6.	0110. 24.	1.17	.1836	1.16	8440.	.84	9190.	1.06	.0427	1.03 .0098		
TIME : 1359	10.00	-9102	10.00	.5366	10.00	. 2915	3	.2341	2	. 7336	3 .1652	0.	15.5
PROBE POS.:		.7053		.5447		.2746		.2322		5069.	.1589	0.	15.2
11.69 IN.		.7193		.5080		.2632		.2296		.7026	.1564	0.	75.0
PRESS .: 14.89 PSIA		.7174		.5437		.2449		.2308		.7295	.1621	0.	76.1
		.8992		.5507		.2344		.2387		. 7533	.1593	0.	76.0
		.8936		.5462		. 2283		-2395		.7532	.1586	0.	17.1
AVERAGE :		.8075		.5383		.2562		-2342		.7271	.1601	!	76.0
CONCENTRATION :	403.7	403.75 PPMC	5.38	. 38 PPHV	2.56	2.56 PPHV	249.95 PPMV	PPMV .	237.7	237.79 PPMV	10 A & 69.	306.6	
MODE-POINT : 1-02													
SPANZERO ADJ.	.95	1100. 26.	1.18	1847	1.16	6440.	*8.	1190.	1.06	.0179	1.03 .0097		
TIME : 1401	20.00	.2229	10.00	66590	10.00	.2158	m	-2984	-	.3806	3 .1957	0.	19.1
PROBE POS.:		.2287		11999		.2010		.3028		.3791	.1969	0.	19.6
9.90 IN.		•2306		.6322		.1877		.3005		.3802	.1968	0.	18.6
PRESS .: 15.19 PSIA		.2250		.6462		.1753		.2984		.3731	11911	0.	78.4
		.2261		.6934		.1743		.3018		.3774	.1970	0.	78.2
		.2269		.6433		.1648		.2959		.3703	1954	0.	78.7
					•		•		•				
AVERAGE :		.2267		.6570		.1865		1662.		.3768	.1966	0.	78.8
CONCENTRATION :	566.7	566.79 PPMC	6.57	.57 PPMV	1.86	1.86 PPMV	324.47 PPMV	Awdd .	328.97 PPMV	PPMV	.85 % VOL	393.1	0£6.F

\*\* NOTE \*\* DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE

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SET 1628-002-1077 SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
CONCENTRATION EDIT REPORT

REPORT DATE 10/27/77
USAF CONTRACT FO8635-77-0216
LRAFB FIELD TEST 2 REFER #- TEMP .- F .- # INPUT VOLIS \*--- C03 SNS J57 59W # P63427 VOLTS 07-00 --\* RNG VOLTS #- IH-03 --# SNE VOLTS ON ---\* RNG S. TYPE VOLIS \*-- XON ---\* SCOTI TEST RNG \*-- JHL ---\* VOLTS RNG

76.4 76.3 76.0 16.0 16.5 DEG.F 00000 1.07 % VOL .2448 .2477 .2453 .2467 1600. .2479 .2478 1600. 1.04 1.04 .4730 1014. .4711 .0181 .4672 4715 .4730 441.80 PPMV .0183 1.05 1.05 .3943 .3924 .3929 .3913 419.61 PPMV .0618 .0617 .3870 .3899 .84 . 84 .0450 . 1676 .1583 .1551 .1522 .1594 1.59 PPMV .0451 . 1636 1.16 1.16 10.00 .8040 .8005 .1932 1941 .8038 .1861 7.99 PPRV .1871 1991 1.18 .3083 768.54 PPMC .0017 .3125 .3074 .2971 .3071 .3121 56. \$6. 50.00 PRESS .: 15.53 PSIA MODE-POINT : 1-03 HODE-POINT : 1-04 SPANIZERO ADJ. SPANIZERO ADJ. SAMPLE DATA : CONCENTRATION TIME : 1403 PROBE POS.: 7.64 IN. AVERAGE :

76.3 76.4

.2658 .2614

.4893 .4893 .4880

4099

.1527 .1536

.1604 .1562

10.00

.9055 .9011

.9110

10.00

.2720

50.00

TIME : 1405 PROBE POS.:

.2804

PRESS .: 15.67 PSIA

4.30 IN.

.4085

.4105 1804.

. 1494 .1545

-9062

.2840

.9237

.4893

00000

.2645 .2675 .2648

16.7

532.9 DE6.F

1.15 % VOL

462.67 PPMV

436.74 PPMV

1.54 PPMV

9.09 PPMV

.2780 694.91 PPMC

CONCENTRATION

17.1

DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE \*\* NOTE \*\*

The Contract of the Contract o

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REPORT DATE 10/27/77
USAF CONTRACT F08635-77-0216
LRAFB FIELD TEST 2 \*- TEMP.- F.-\*
INPUT REFER VOLTS 96000 \*--- C02 ---1.04 SNE J57 59W # P63427 RNG VOLTS \*- 07-03 --\* .0184 1.05 \*-- CO-HI -\* .0618 SET 1628-002-1077 .84 VOLTS #--- NO ---# .0451 1.16 RNG SCOTI TEST S.TYPE RNG VOLTS \*-- XON ---\* .1873 1.18 SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
CONCENTRATION EDIT REPORT
SCOTT \*-- THC ---VOLTS \*6. RNG MODE-POINT : 1-05 SPANZERO ADJ.

78.0

11.9 78.2 19.2

99999

.2738

.4573

.3923

.3807

.1580 .1502 .1486 .1406 .1366 .1468 1 .47 PPMV

10.00

.9648

10.00

.2132

50.00

TIME : 1406 PROBE POS.: -.02 IN.

.2127

9646 .9613 .9684

> .2129 .2117 .2122

.2106

PRESS.: 15.42 PSIA

.3839 .3766

.9264

.9575 9.57 PPHV

.4560

.4587 .4578

.2713

.2741 .2734

.2725

78.2 DE6.F

547.1

1.19 \$ VOL

425.35 PPMV

.4577

.3825

410.85 PPMV

9600. .2543 .2536

1.05

1.04 .1337

.0619

+84

1.16 .0221

1.18 .0203

.0378

m

.3872 .3978 4004

.0847 -0862

.6050 6007 .6029

25.00

1928 .1926

.1978

100.00

.1027

.0893 .0885 .0863

76.8 76.1 76.3

00000

.2549 .2500 .2501

.3738

8680.

.0857

.0882

.5934

1965.

.1921 .1914 .0 76.5 453.3 DEG.F

1.10 % VOL

.2526

.3907

.0869 62.01 PPMV

.5992 14.98 PPMV

.1934

19.34 PPMV

38.77 PPHV

-----

CONCENTRATION AVERAGE :

0

530.53 PPMC

MODE-POINT : 3-01

+6. 2.00 SPANIZERO ADJ. SAMPLE DATA : TIME : 1409 PROBE POS.: 11.55 IN.

PRESS.: 16.38 PSIA

62

.0770

.0888 22.19 PPMC

0

CONCENTRATION

0

DATA MARKED WITH AN ASTERISK (+) NOT INCLUDED IN AVERAGE

\*\* NOTE \*\*

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# P63427 157 59¥ SET 1628-002-1077 11 9117 S,TYPE B SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
CONCENTRATION EDIT REPORT

REPORT DATE 10/27/77 USAF CONTRACT FO8635-77-0216 LRAFB FIELO TEST 2

0

,		* THC	* 3	ON	* X	N	*	.03+	4- IH-	1-03+	*- 0	03	15	#- TEMP	- F -	*
•		RNG	VOLTS	RNG	V6L15	RNG	RNG VOLTS	RNG VOLTS	VOLTS	RNG VOLTS	401.15	RNG VOLTS	VOL TS	INPUT REFER	REFE	ER
•	HODE-POINT : 3-02															
•	SPANZERO ADJ.	*6.	.94 .0378	1.18	.0204	1.16	.0105	*8.	•190•	1.04	.1343	1.05	5600*			
•	TIME : 1411	5.00 .0712	-0712	100.00	.2606	100.00	.2004	3	2660.	2	.5267	~	.3180	0.	76.	6.
	PROBE POS.:		*110.		-2606		.1981		.1033		.5356		.3186	0.	17.	.2
	9.87 IN.		6110.		.2576		.1954		.1012		.5391		.3134	0.	.11.	2.
	PRESS.: 18.17 PSIA		.0755		.2610		11971		.1034		5325		.3166	0.	11.	*
			.0680		.2588		.1970		.1023		.5217		.3170	0.	11.	.3
•				'	1000				1000	1		•		1 (		
	AVERAGE :		87/0-		1657.		1976		4101.		.5353		.3167	0.	11.	
	CONCENTRATION :	18.20	18.20 PPMC	25.97 PPHV	AH dd	19.7	A bbw	17.4	17.49 PPMV	52.11 PPMV	N M d d	1.39	1.39 \$ VOL	246.1	0E6.F	_
0	MODE-POINT : 3-03															
63 Q	SPANIZERO ADJ.	*6.	.94 .2060	1.18	•0205	1.16	.0106	* 0.	.0620	1.04	.1349	1.05	5600.			
	TIME : 1413	1.00	.3663	100.00	.3216	100.00	.2414	3	.1111	*	.6275	m	.3730	0.	79.	0.
	PROBE POS.:		.3756		.3171		.2336		.1100		6819		.3694	0.	78.	
0	7.67 IN.		.3897		.3147		.2390		.1124		.6320		.3734	0.	78.	.3
	PRESS.: 20.32 PSIA		.3770		.3200		.2353		.1137		.6228		.3748	0.	17.	8.
			.3436		.3202		.2400		.1120		.6143		.3723	0.	78.2	.2
0		•		•						1		•				1
	AVERAGE :		.3704		.3187		.2379		.1113	.6231	.6231		.3726	0.	78.	*
(	CONCENTRATION :	18.52	18.52 PPMC	31.87	NHdd .	23.7	AND 6	88.3	A PPM V	61.14	PPMV	1.65	10 % 2 S	663.8	DE 6.F	

DATA MARKED WITH AN ASTERISM (\*) NOT INCLUDED IN AVERAGE \*\* NOTE \*\*

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REPORT DATE 10/27/77	USAF CONTRACT FOR635-77-0216 LRAFB FIELD TEST 2
-	USAF COI
SET 1628-002-1071	11.9.11
	TEST S,TYPE 8
SCOTT ENVIRONMENTAL TECHNOLOGY INC.	USAF TURBINE ENGINE EMISSIONS INVENTORY CONCENTRATION EDIT REPORT
•	•

	-	* THC		* x0		* 0	03*	* СО-НІ -*	* 07-03*	* C03	B- TEME	*- f
	RNG	VOL TS	RNG	RNG VOLTS	RNG	RNG VOLTS	RNG	VOLTS	PNG VOLTS		INPUT	INPUT REFER
HODE-POINT : 3-04												
SPANZERO ADJ.	*6.	.94 .2059	1.18	.0206	1.16	.0106	48.	.0629	1.03 .1354	1.06 .0095		
TIME : 1414	1.00	11157	100.00	.3279	100.00	.2543	3	.1030	3 .5108	3	0.	76.8
PROBE POS.:		.1736		.3222		.2539		.1008	.5198		0.	76.6
4.26 IN.		.1708		.3291		.2601		.1020	.5151		0.	17.6
PRESSO: ZU.94 PSIA		.2155		. 3248		2546		10031	5202	3691	0.0	76.8
		-								•	2 !	
AVERAGE :		.1789		.3268		.2559		1027	.5187		0.	16.9
CONCENTRATION :	8.9	8.95 PPMC	32.6	32.68 PPHV	55.5	25.59 PPHV	78.3	3 PPMV	50.80 PPMV			0E6.F
MODE-POINT : 3-05												
SPANZERO ADJ.	*6.	.94 .2059	1.19	•0200	1.16	90100	**	.0620	1.03 .1358	1.06 .0094		
TIME : 1415	1.00	.1227	100.00	.3106	100.00	. 2504	*	.1027	3 .4685	3	0.	76.1
PROBE POS.:		.1131		.3101		.2527		.1030	8884.		0.	76.5
06 IN.		.1180		.3049		.2500		.1016	.4873		0.	16.9
PRESS.: 19.80 PSIA		.1195		.3096		.2521		.1037	.4863		0.	17.1
		11192		-3092		. 2513		.1042	4814	.3582	0.	17.6
										•		
AVERAGE :		.1185		.3089		.2513		.1030	.4825		0.	17.0
CONCENTRATION :	5.9	5.92 PPMC	30.8	30.89 PPHV	25.1	25.13 PPMV	78.7	78.70 PPMV	47.36 PPMV	1.58 2 40	109.0	

\*\* NOTE \*\* DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE

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# P65427 357 59W SET 1628-002-1077 11/8/11 4 SITYPE SCOTT ENJIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
CONCENTRATION EDIT REPORT
SCOTT TEST

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USAF CONTRACT FO8635-77-0216 LRAFB FIELD TEST 2 #--- 1HC --\* #--- NOX --\* #--- NO ---\* #-- CO-HI -+ #-- CO-LO -\* #--- CO2 --\* #- TEMP -- F.-\*

	RNG	RNG VOLTS	RNG VOLTS	VOLTS	RNG	RNG VOLTS	RNG	RNG VOLTS	RNG	RNG VOLTS	RNG	RNG VOLTS	INPUT REFER	REFER
MODE-POINT : 4-01														
SPANZERO ADJ.	.93	.93 .2057	1.19	.0203	1.16	9010.	*8.	.0621	1.03	.1368	1.06	*600*		
TIME : 1418	1.00		100.00	.5631	100.00	.5134	8	.0759	8	.1457	M	.3766	0.	75.9
PROBE POS.: 11.65 IN.		.0258		.5625		.5232		.0764		.1575		.3761	0 0	75.6
PRESS.: 19.26 PSIA		.0318		.5585		.5160		.0751		.1532		.3724	9.0	76.2
AVERAGE : CONCENTRATION :	-	.0268	56.28	.5628 56.28 PPMV	51.9	. 5194 VM94 PP. 15	51.0	.0762 51.60 PPMV	15.5	.15.35 VM 94 75.51	1.6	.3750	6.35.3	75.6
MODE-POINT : 4-02														
SPANZERO ADJ.	.93	.93 .2057	1.19	•020•	1.16	.010	3 20	.0621	1.03	.1370	1.06	+600°		
TIME : 1419	1.00	.0255	100.00	.7531	100.00	.7083	~	.0825	~	.2035	~	4684	0.	17.1
9.89 IN.		.0277		7442		.6924		.0823		.2221		1064	0	78.4
PRESS .: 23.19 PSIA		1610.		.7454		.6872		*0852		•5309		.4870	0.	78.6
		.0259		.7422		. 6889		.0825		-2336		.4867	0.	78.7
AVERAGE : CONCENTRATION :	1.2	.0254 1.27 PPHC	14.19	-1479 74.79 PPMV	9.69	VM44 14.84	58.1	.0830 VM94 51.85	22.3	.22.35 PPMV	2.1	2.18 2 VOL	798.1	78.3 DEG.F

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DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE \*\* NOTE \*\*

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SET 1628-002-1077 SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
CONCENTRATION EDIT REPORT
SCOTT TEST 5,TYPE

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REFER REPURT DATE 10/27/77
USAF CONTRACT F08635-77-C216
LRAFB FIELD TEST 2 #- TEMP .- F .-# INPUL RNG VOLTS \*--- 602 ---JST 594 # P63427 RNG VOLTS \*- 07-03 --\* RNG VOLTS 11/8/11 VOLTS #--- NO ---\* PNG 13 RNG VOLTS \*-- XON ---\* \*--- THE ---\* RNG VOLTS

1.07 2965 .3128 .1374 .2967 .2797 1.02 .0937 .0955 .0943 .0621 .0921 6160. .84 .0106 .8187 .8150 .8137 .8087 .8226 1.16 100.00 .9695 .9693 9656 .9735 .0209 .9845 1.19 100.00 .0080 .0034 .2057 .00. .0031 .0100 .93 1.00 PRESS .: 28.54 PSIA MODE-POINT : 4-03 SPANIZERO ADJ. SAMPLE DATA : TIME : 1420 PROBE POS .: 7.68 IN.

76.3 17.1 76.3 74.4 76.2

.5764

.5756 .5711

.0093

00000

DEG.F

2.58 \$ VOL

29.82 PPMV

.0935 68.64 PPMV

81.57 PPMV

.9713

.5718

.5712

97.13 PPMV .000. .32 PPMC CONCENTRATION AVERAGE :

0

0

-.0018 .93 .2056 -- 00057 1.00 MODE-POINT : 4-04 SPAN/ZERO ADJ. SAMPLE DATA : TIME : 1421 PROBE POS.:

-.0132 -.0113 PRESS .: 30.08 PSIA 4.38 IN.

75.5 75.8 75.8

00000

.5268 .5264 .5262

.2854 .3072 .3074 .2979

1960.

1911. .1798

.8885

.7679 .7671 76.71 PPMV

.0956

.0093 .5266

1.07

1.02 .1378

.84 .0622

1.16 .0106

.0210

1.19

.3177

.0956

.7571 . 75 39

100.001

.8685 .8796

100.00

.1034

15.6 75.6

1011.7 DE6.F

2.36 % VOL

.5271

.3031 30.41 PPMV

73.08 PPMV

1160.

.8868 .9250 88.97 PPMV 1688. -.0113

CONCENTRATION :

AVERAGE :

\*\* NOTE \*\*

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DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE

REPORT DATE 10/27/77	USAF CONTRACT FOR635-77-DZ16
	JS7 59W # P63427
	187 59W
SET 1628-002-107	11.8.11
	TEST S.IYPE 8
INC.	
SCOTT ENVIRONMENTAL TECHNOLOGY INC.	CONCENTRATION EDIT REPORT

### ### ##############################	1.00	.93 .2056 1.00 .0015 -0122 -0122 -0174 -0202 -0102	1.19 100.00 80.4	.0210 .7989 .8057 .8057 .8019 .8159	1.16 100.001	1.16 .0106 10.00 .7038 .7068 .7068 .7052 .7166	84 .0622 3 .0960 9 .0954 .0935 .0935 .0946	3 .0960 3 .0964 .0954 .0945 .0945 .0946 .0946	3 .3183 3 .3183 3 .3183 3 .3183 2875 2752 2588 2588 28.96 PPMV	3 .3183 3 .3183 3 .3183 2 .2752 2 .2588 2 .2884	1.07 .0093 1.07 .0093 3 .4729 4779 4779 47788 47788	3 .4729 3 .4729 4784 .4788 .4788 .4788 .4788	.0 77.6 .0 77.6 .0 78.0 .0 78.0 .0 78.8	77.2 77.6 78.0 78.8 78.8 78.5
SPAN/ZERO ADJ. SAMPLE DATA : TIME : 1505 PROBE POS.: 11.71 IN. PRESS.: 20.33 PSIA AVERAGE :	00.01	.90 .01278 .1089 .1108 .1288 .1273	100.00	.22 .0235 .00 .1770 .1743 .1636 .1636	100.001	.00 .1121 .00 .1036 .1021 .0976 .0983	8	3 .2173 3 .2173 2.458 -2752 -2833 -2921	2 2	2 .5764* .6490* .90000* 1.5553*		3 .5692 .5692 .5646 .5546 .5541	0000010	25.50 2.60 2.60 2.60 2.60 2.60 2.60 2.60 2.6

0 67

0. 0

\*\* NOTE \*\* DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE

SET 1628-002-1077	11.9.17
SET 16	11
	SCOTT TEST S,TYPE B
	TEST
INC. INVENTORY	SC011
TECHNOL OGY EMISSIONS	REPORT
SCOTT ENVIRONMENTAL TECHNOLOGY INC. USAF TURBINE ENGINE EMISSIONS INVENTORY	CONCENTRATION EDIT REPORT
SCOT	CONCI

USAF CONTRACT FO8635-77-0216 LRAFB FIELD TEST 2

JS7 59W # P63427

	RNG VOLTS	WOLTS	RNG	VOLTS	BNG H	RNG VOLTS	RNG	RNG VOLTS	# CO-LO -#	10 -* VOLTS	RNG VOLTS	VOLTS	*- TEMP F* INPUT REFER	REFER
MODE-POINT : 5-02														
SPANIZERO ADJ.	.89	1210. 68.	1.22	.0236	1.17	.0108	. 83	.0633	1.01	.0234	1.14	.0084		
TINE : 1506	10.00 .1448	.1448	100.00	.2186	100.00	.1309	3	.3458	-	.5673*	٣	6169.	0.	19.9
PROBE POS.:		.1436		.2114		.1255		.3584		.7783*		.6863	0.	19.0
9.94 IN.		.1386		.2130		.1238		.3633		*8968*		.6873	0.	78.9
PRESS.: .00 PSIA		.1288		.2178		.1271		.3724		.9716*		-6932	0.	19.3
		.1327		.2157		.1256		.3727	1	1.0542*		-6892	0.	17.5
AVERAGE :		.1377		.2153		.1266		.3625	•	0000		.6896	0.	78.9
CONCENTRATION :	68.84	58.84 PPMC	21.5	21.53 PPHV	12.6	12.66 PPMV	390.7	390.72 PPMV	00.	VMAG DO.	3.17	3.17 \$ VOL	173.6	0E6.F
HODE-POINT : 5-03														
SPANZERO ADJ.	6.	.89 .0127	1.22	.0236	1.17	.0108	.83	.0633	1.01	.0234	1.14	•800•		
TIME : 1506	10.00	.1378	100.00	.2724	100.00	.1590	3	.3417	1	.5526#	3	.7925	0.	17.2
PROBE POS.:		.1433		.2622		.1530		.3578		.7592*		. 1903	0.	76.2
7-76 IN.		.1421		.2657		.1511		.3723		.9345#		.7862	0.	75.8
PRESS.: .00 PSIA		.1347		.2629		.1514		.3794	1	*04 70*		.7859	0.	75.4
		.1329		.2611		.1508		.3871	-	1.1339*		.7839	0.	75.7
			•						1					
AVERAGE :		.1382		.2648		.1531		.3677		0000		.7878	0.	76.1
CONCENTRATION :	80-69	69.08 PPMC	26.48	AHAA 8	15.3	1 PPHV	395.9	395.96 PPMV	00.	VMAG DO.	3.73	10 4 2 :	1012.6	0E6.F

\*\* NOTE \*\* DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE

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SET 1628-D02-1077 SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
CONCENTRATION EDIT REPORT
SCOTT

CHANGE STREET, CANADA

B

REFER USAF CONTRACT FOR635-77-0216 LRAFB FIELD TEST 2 REPORT DATE 10/27/77 INPUT REFER VOLTS \*--- C02 RNG J57 594 # P63427 RNG VOLTS 07-03 --\* VOL TS \*-- CO-HI -\* RNG 11 9/17 VOLTS \*--- NO ---\* RNG SCOTT TEST SATYPE B VOL 15 \*-- XON ---\* RNG \*-- JHL ---RN6 VOLTS

DE6.F 0.1 0.-0.-0.-3.43 \$ VOL .7359 .7373 .0082 .6347 0249. .0082 .7392 .7271 1.16 1.15 m 1.3334\* 1.1174\* \*5106. 1.0076\* 1.2173\* 1 1.0893\* .9385\* .0239 1.00 .0240 .0000 VMAG DO. 1.00 .3131 .3155 .3258 .0635 .0634 .3076 .3352 .3482 352.63 PPMV .83 .83 .0108 .0108 .2027 .1988 . 1993 .1938 . 1946 . 1978 19.78 PPMV -2152 .2004 1.17 1.17 100.00 100.00 .0240 .3110 .3053 .0241 .2927 .3003 .2989 .3028 30.28 PPMV 3057 .2983 1.22 1.22 100.00 100.00 .0383 .0846 .0383 .1322 .1207 .0844 .1168 .1176 30-18 PPMC .1238 68. .89 2.00 5.00 PRESS .: 30.63 PSIA MODE -POINT : 5-04 MODE-POINT : 5-05 CONCENTRATION : SAMPLE DATA: SPANIZERO ADJ. SAMPLE DATA : PROBE POS.: TIME : 1514 PROBE POS.: 4.50 IN. AVERAGE : 69

16.5

16.5 76.8

17.1

16.7

DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE \*\* NOTE \*\*

76.5

0.-

.65269

1.01884

\*81 56.

.3128

.1937

2882 .2881

.0808 .0819 .0812

PRESS.: 32.40 PSIA

-.07 IN.

0

0

0

. 1937 .1909

.2849

.3143 .3153

.6359

+629.

0.-0.-0.

76.1 DE6.F

2.68 \$ VOL .6342

0000°

340.67 PPMV

.1988 19.88 PPHV

29.19 PPHY

-0826 20.65 PPMC

AVERAGE :

0

0

75.5

0

0

STOP CONC

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SCOTT ENVIRONMENTAL TECHNOLOGY INC.	NTAL TECHN	TOT OE TINC			SET 16	SET 1628-002-1077	11			REPORT DA	REPORT DATE 10/27/77
CONCENTRATION EDIT REPORT	DIT REPORT	T TIONS THAT		REFERENCE CURVE TABLES - NON-LINEAR INSTRUMENTS	JRVE TABLES	- NON -LIN	EAR INSTA	RUMENTS	USAF CO	CAL. DA	CAL. DATE 7/22/77
		IH - 03	*		* 00 - 10#	- 407 - 0	*		*	C02	*
	РРИМ	VOLTS	ANGLE		РРМУ	VOLTS	ANGLE		101 2	VOLTS	ANGLE
RANGE 1 :				RANGE 1 :				RANGE 1 :			
	00.	00000	1.5705		00.	00000	1.5695		00.	00000	1.4161
	245.00	.0650	1.5705		30.10	00 +0.	1.5694		1.46	.1950	1.4600
	895.00	.2130	1.5706		60.30	.0830	1.5694		3.20	.3500	1.4950
	1840.00	.3930	1.5706		78.40	.1060	1.5696		64.4	.4310	1.5145
	2400.00	0666.	1.5706		176.00	.2240	1.5696		60.9	.5110	1.5259
	4127.00	.7760	1.5707		245.00	.3000	1.5698		8.90	.6230	1.5357
	8100.00	1.2080	1.5707		614.00	0019.	1.5700		12.10	.7200	1.5432
	00.0096	1.3780	1.5707		895.00	.8340	1.5700		15.00	.7920	1.5487
RANGE 2 :				RANGE 2 :				RANGE 2 :			
	00.	0000	1.5703		00.	00 00	1.5676		00.	0000	1.3459
	176.00	.0710	1.5705		30.10	.1000	1.5674		1.46	.2850	1.4101
	245.00	0060*	1.5705		60.30	•2060	1.5674		3.20	.5100	1.4605
	614.00	.2070	1.5705		78.40	.2640	1.5677		64.4	06290	1.4886
	895.00	.3000	1.5705		176.00	.5570	1.5679		60.9	.7450	1.5051
	1840.00	.5910	1.5705		245.00	.7460	1.5682		8.90	.9110	1.5193
	2400.00	.7460	1.5705		-1.00	-1.0000	0000		12.10	1.0520	1.5342
	4127.00	1.2320	1.5705	1	-1.00	-1-0000	0000		-1.00	-1.0000	0000
RANGE 3 :				RANGE 3 :				RANGE 3 :			
	00.	0000.	1.5687		000	0000	1.5611		00.	0000	1.3382
	30.10	.0510	1.5695		30.10	.3000	1.5606		1.46	.3320	1.3562
	176.00	.1840	1.5700		60.30	.6150	1195-1		3.20	0569*	1.3884
	245.00	-2300	1.5700		78.40	0611.	1.5624		64.4	.9020	1.4350
	614.00	.6030	1.5697		-1.00	-1.0000	0000		-1.00	-1.0000	00000
	895.00	.9610	1.5694		-1.00	-1.0000	.0000		-1.00	-1.0000	00000

SPAN VOLTAGES ALREADY CORRECTED FOR ZERO GAS VOLTAGES.

\*\* NOTES \*\*

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A CONCENTRATION VALUE OF -1.0 INDICATES NO DATA.

USAF CONTRACT FO8635-77-0216 LRAFB FIELD TEST 3 # P63481 M65 650 SET 1628-002-1077 9 6,TYPE SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
CONCENTRATION EDIT REPORT

0

1122177 REFERENCE CURVES CALIBRATION DATE : CALIBRATION DATA FOR PERIOD 1326 TO 1605 NON-LINEAR INSTRUMENTS :

	03+	*+	03	* 07 -	* C03+	
	PERIOD	PERIOD	PERIOD	PERIOD	PERIOD	PERIOD
	START	END	START	START END	STARI	ENO
RANGE 1 SPAN ADJ.FACTOR	9686.	.9652	.9922	-2684	1.0532	1.0941
ZERO READING	.0276	*0344	.0122	.0246	0000-66-	0000-66-
RANGE 2						
SPAN ADJ.FACTOR	9166*	.9893	6166.	.3341	1.0695	1.1171
ZERO READING	.0386	.0478	.0359	.0628	2600.	.0068
RANGE 3						
SPAN ADJ.FACTOR	.8893	.8046	.9016	.8117	1.1186	1.1847
ZERO READING	1101.	.1265	.1124	.1944	•0024	.0021
LINEAR INSTRUMENTS :						
	3HL	*	N*	*	0N	*

71

0

0

0

		PER 100 START	PERIOD END	PERIOD START	PERIOD END	PERIOD STARI	PER10D END
SPAN ADJ.FACTOR	FACTOR	1886.		1.0118	1.1991	1.00.1	1.2413
ZEROES FO	ZEROES FOR RANGES (THC) (NOX/NO)						
1.0	2.5	.2287	.3304	.1520	. 3563	.3093	.1621
5.0	10.0	.0428	.0556	.0194	.0851	.0205	.0181
10.0	25.0	•0186	.0261	.0133	.0335	.0128	1010.
20.0	100.0	.0033	6400*	•0039	.0098	62000	1100.
100.0	250.0	.0020	.0028	.0024	.0036	1100-	.0016
500.0	1000.0	*000°	9000*	*000°	6000.	.0008	.0004
1000.0	2500.0	*0005	.0003	.0002	*000°	.0003	.0002
800000	100000	00000	1000.	00000	1000.	.0001	0000

SPAN GAS CONCENTRATIONS :

	THC-PPHC	NOX-PPH	NO-PPH	NO-PPM CO-HI-PPM CO-LO-PPM	Kdd-07-03	C 02 - 3	
SPAN 1	24.48	19.70	19.70	245.00	78.40	65.5	TOT.PRESS.FACT. 1.000, AUJ.
SPAN 2	417.00	06.06	90.40	2400.00	245.00	8.90	SAMPLE PROBE TYPE - SP
SPAN 3	4620.00						THERMOCOUPLE TYPE - K

SET 1628-002-1077 1116 18 6.TYPE B SC011 1EST SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
CONCENTRATION EDIT REPORT

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JS9 59W # P63481

USAF CONTRACT FOR635-77-0216 LRAFB FIELD TEST 3

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		RNG VOLTS	#C+	RNG .	RNG VOLTS	RNG	* NO* RN6 VOLTS	RNG CO	RNG VOLTS	# C0-L0 -# RNG VOLTS		# C02* RNG VOLTS	2* VOLTS	*- TEMP F* INPUT REFER	REFE	* 2 !
	MODE-POINT : 1-02															
,	SPANZERO ADJ.	66.	*600. 66.	1.02	.0223	1.02	.0204	68.	.1028	.960128	28	1.12	.0053			
•	TIME : 1333	50.00	.1821	10.00	.7146	10.00	.0879	*	.3558	1 .39	50	~	.2133	0	17.	5
	PROBE POS.:		.1826		.7024		.0867		.3589	.3959	65		.2135	0	77.8	8
•	9.73 IN.		.1789		.7231		.0857		.3593	.39	111		1512.	0	78.	-
	PRESS.: 15.41 PSIA		.1833		.7063		.0830		.3594	•35	7.1		.2143	0	17.	6.
			.1871		.7036		.0835		.3617	.39	85		.2140	0	78.	9.
										1 1 1 1	1	1				1
0	AVERAGE :		.1828		.7100		.0854		.3590	1965.	19		.2141	0	78.	0
	CONCENTRATION :	456.94	456.94 PPMC	7.1	O PPHV	8.	S PPHV	387.1	387.16 PPMV	352-16 PPMV	> H.	.93	.93 2 VOL	-	DE6.F	
0	HODE-POINT : 1-03							,								
0	SPANZERO ADJ.	66.	.99 .0034	1.02	•0226	1.02	.0203	68.	•1029	.96 .0128	28	1.12	.0053			
	TIME : 1334	50.00	.2159	10.00	.8191	10.00	.0857	3	.4399	1 .45	9.6	2	.2493	0	78.	5.
	PROBE POS.:		.2224		.8166		.0833		.4398	54.	87		.2507	0	78.	3
72	7.70 IN.		.2154		.8200		.0814		.4377	54.	65		.2489	0	19.	9
	PRESS .: 15.64 PSIA		.2218		.8205		.0836		1044.	.4565	65		.2469	0	19.	2
,			.2226		9018-		.0848		.4435	54.	.4588		.2486	0	78.7	-
C			*******								1					

DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE \*\* NOTE \*\*

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0

0

78.9 0E6.f

0.-

1.08 \$ 401

425.62 PPMV

.0838

8-17 PPHV

.2196 549.12 PPHC

CONCENTRATION :

0

0

.4435 .4403 467.06 PPMV

	SCOTT ENVIRONMENTAL TECHNOLOGY INC.	TECHNO.	1 4907	NC.				SET 16	SET 1628-002-1077	11011			2	REPORT DATE 10/27/77	TE 107	11111
0	CONCENTRATION EDIT REPORT SCOTT	REPORT	SNO	SCOTT 1	TEST		6.TYPE 8	8	1116 18	30	186 65n	# P63481	USAF CONTRACT FURESS-77-0216 LRAFB FIELD TEST 3	RACT FUB	08635-77-02 FIELD TEST	-0216
0																
		RNG	RNG VOLTS	S RNG		NOX+	RNG	RNG VOLTS	RNG	RNG VOLTS	# CO-LO -*	-L0 -*	* C02*		INPUT REFER	F
(	MODE-POINT : 1-04															
	SPANZERO ADJ.	66.	.99 .0034	1.02		.0231	1.02	.0203	8.	.1031	56.	.0129	1.12 .0052	2		
0	TINE : 1335	50.00	50.00 .1694	10.00		9608	10.00	.1115	e .	.3833	-	.4111	3 .2359	•	0	76.9
	4.44 IN.		.1738		• •	8018		.1065		.3899		.4104	.2368	n so	20.	75.8
0	PRESS .: 15.65 PSIA		1771.		• •	.8197		.1067		.3866		.4123	.2329	• 0	0	13.7
(			1	, .	-	10000								!	1	1
)	CONCENTRATION :	435.	435.85 PPHC		8.13	13 PPHV	1.0	1.08 PPHV	415.7	415.71 PPHV	370.1	370-19 PPMV	1.02 2 001	10	0 DEG-F	6.F
0	MODE-POINT : 1-05															
73	SPANZERO ADJ.	66.	•€00. 66.	1.02		.0236	1.02	.0203		.1033	56.	.0130	1.12 .0052	2		
	TIME : 1336	20.00	1505	10.00		8545	10.00	.1402	m	.3605	-	.3871	3 .2402	2 3	0.1	74.3
0	32 IN.		.1558		•	.8799		.1335		.3637		.3878	.2426	. 9	0	75.2
	PRESS.: 15.59 PSIA		.1515		• •	.8618		.1318		.3621		.3867	.2399	• -	0	76.6
0					1									-	-	
	CONCENTRATION :	378.	378.52 PPHC		8.61	. 8608 61 PPMV	1.3	1.35 PPHV	389.5	389.56 PPMV	340.6	340.65 PPHV	1.05 \$ 406	70	0.	75.5 DEG.F
,																

\*\* NOTE \*\* DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE

REPORT DATE 10/27/77	USAF CONTRACT FOR635-77-0216 LRAFB FIELD TEST 3
	JS9 59W # P63481
SET 1628-002-1077	SC 1116 18
	TEST 6, TYPE B
67 INC.	
SCOTT ENVIRONMENTAL TECHNOLOGY INC.	USAF TURBINE ENGINE EMISSIONS INVENTOR
SCOTT ENV	USAF TURB

	RN6 VOLTS	121	RNG VOLTS	VOLTS	RNG VOLTS	VOLTS	RNG	RNG VOLTS	RNG	RNG VOLTS	RNG	RNG VOLTS	INPUT	INPUT REFER
HODE-POINT : 3-01														
SPANZERO ADJ.	.99 .2352	255	1.02 .0146	9410.	1.02	.0127	. 88	.1033	06.	.1176	1.12	2 500		
TINE : 1336	1.000 .51	.5156	25.00	.8214	25.00	1419.	~	-0892	2	.5045	3	.2572	0	78.6
PROBE POS.:		.4701		. 1954		.5857		.0889		.5023		.2483	0	78.
11.41 IN.	•	.4396		.7809		.5926		.0865		.4862		.2469	0	17.
O PRESS .: 17.07 PSIA	**	-4085		.7858		. 5844		.0850		0684.		.2481	0	11.
	.3	.3765		.7850		.5807		.0867		.4822		.2449	0	11.11
		1											-	
	124451	121		.1937		. 5916		.0873		.4928		1642.	0	17.9
CONCENTRATION :	22.10 PPMC	) HC	19.84	9.84 PPNV	14.7	14.79 PPMV	62.3	62.33 PPHV	48.3	48.34 PPMV	1.0	1.08 % VOL	0.	DE6.F
O MODE-POINT : 3-02														
SPANZERO ADJ.	. 66.	.2356	1.02	.0043	1.02	6100.	.88	.1034	0.6.	.1179	1.12	2500.		
TIME : 1337	1.00 .3	.3506 1	100.00	.2635	100.00	.1919	2	1860.	3	.6275	3	.3128	1	76.
PROBE POS.:				.2612		.1924		.0993		.6258		.3150		11.
.NI 89.6	.3.	.3283		.2614		.1893		1660.		.6241		.3145		15.
PRESS .: 19.27 PSIA	.30	. 30 34		.2637		1001.		*660*		.6265		.3119	1	75.
	.3101	.3101		.2632		.1898		.1008		•6308		.3071	7-	75.3
	.3	.3262		.2626		1901		5660.		.6269		.3122	7	76.1
CONCENTRATION :	16.31 PPMC	JHC	26.26	6.26 PPMV	19.0	19.07 PPMV	14.9	14.90 PPMV	61.5	61.53 PPMV	1.3	1.37 # VOL	0.	0E6.F

DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE \*\* NOTE \*\*

•													
•	USAF TURBINE ENGINE EMISSIONS INVENTORY CONCENTRATION EDIT REPORT	EMISSION REPORT	IS INVES	SCOTT TEST		6.TYPE B	8/8	87 9777		JS9 59W # P63481	USAF CON	TRACT F08635-77-0216 F1ELD TEST 3	7-0216 FST 3
•													
		RNG VOLTS	4C+	RNG	NOX*	8 N G	RNG VOLTS	* CO-HI -*	-HI -#	# CO-LO -#	# £02# RNG VOLTS	*- TEMP F* INPUT REFER	- F*
	MODE-POINT : 3-03											!	
0	SPANZERO ADJ.	66.	.99 .2372	1.03	.0004	1.03	6100.	.88	.1038	.89 .1192	1.12 .0051		
0	TIME : 1339	1.00	1.00 .3319	100.00	.3076	100.00	.2243	8	.1084	3 .6868	3 .3508	7:	76.3
	PROBE POS.:		.3012		3051		. 22240		.1080	.7006	.3528	77	76.4
0	PRESS .: 20.67 PSIA		.3044		.3059		.2221		1104	.7000	.3539	0	77.6
			.3455		.3040		.2230		.1099	1001.	.3531	7	18.1
C			. 3091		. 3049		*027.		*011.	5 6 6 6 7	.3492	0	78.5
	AVERAGE :		.3175		.3056		.2228		.1095	8969.	.3521		17.4
	CONCENTRATION :	15.87	15.87 PPMC	30.5	30.56 PPMV	22.2	22.28 PPMV	85.8	85.82 PPMV	68.99 PPMV	1.55 % VOL	0.	DE6.F
	MODE-POINT : 3-04												
75	SPANZERO ADJ.	66.	.99 .2383	1.03	**00*	1.03	6100.	30 30 •	.1041	.89 .1201	1.12 .0051		
(	TIME : 1341	1.00	.2034	100.00	.2760	100.00	.2073	*	8460.	3 .5694	3 .3187	0	78.7
0	PROBE POS.:		.2028		.2739		.2068		9560.	.5658	.3155	0	78.7
	PRESS.: 20.71 PSIA		.1456		.2750		.2075		9860	57112	.3157	7.7	19.9
0			1961		.2721		• 5065		6960*	.5698	.3163	0	19.5
												1	
0	CONCENTRATION :	9.34	9.34 PPMC	27.4	27.41 PPMV	20.6	20.69 PPMV	711.3	71.32 PPMV	55.71 PPMV	1.39 1 VOL	0	79.2 DF 6.F

DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE \*\* NOTE \*\*

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SALL SALES	110mm	-	INC.			SET 16	SET 1628-002-1077	110			RE CONTR	REPORT DATE 10/27/77	10/27/77	
MIN 1997 W	1804		31 11035	15	6.TYPE B	18	1116 18	950	159 59W #	# P63481	LRAFB	FIELD	FIELD TEST 3	
	-	1												
	1	191.15	BNG	VOLTS	RNG	RNG VOLTS	RNG VOLTS	VOL TS	RNG VOLTS	vol. 15	RNG VOLTS		INPUT REFER	
80-1-1-10														
0 Hbc.	*	.2391	1.03	-0045	1.03	•100.	80	.1042	.89	1201	1.13 .0051			
180	1.00	.1206	100.00	1075.	100.00	.2145	۶	1060-	2	.5185	3 .3196		78.3	
14		.1299		.2704		.2129		.0930		.5285	.3170	:	78.1	
18-77 PLES		.1277		-2694		.2133		.0937		. 5232	3203		78.3	
		.1283		-2126		.2139		0060		.5346	.3203		17.6	
		.1252		.2706		.2138		1160.		.5271	.3181	17	78.1	
HIION I	6.2	6.26 PPMC	27.	27.06 PPHV	21.3	21.38 PPMV	66.86 PPMV	PPMV	51.6	51.60 PPMV	1.40 2 001	•	J. 930 0	
10-4 : 140														
	66.	.99 .2402	1.03	\$ 600.	1.03	6100.	. 88	.1045	. 89	.89 .1216	1.13 .0050			
11100	1.00	1770-	100.00		100.00	.4737		9190.	٣	.2534	3 .3757		78.3	
. In.		2010-		50105		.4754		1690		2625	.3755	0.1	78.3	
4124 CO. 1		.0717		.5068		.4708		.0669		.2658	.3719		77.9	
		.0672		.5018		. 4734		8590.		.2632	.3758		17.9	
		.0744		.5075		.4739		.0675		.2588	.3753	0	78.1	
. ******	3.7	3.72 PPMC	50.7	2	47.3	47.39 PPMV	43.72 PPMV	PPMV	26.04	26.04 PPMV	1.66 \$ VOL		D DE	

\*\* \*\* BATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE

REPORT DATE 10/27/77	USAF CONTRACT FUB635-77-0216 LRAFB FIELD TEST 3
	JS9 59W # P63481
	M65 6
SET 1628-002-1077	J 1119 18
	TEST 6.TYPE B
	TEST
INC.	INVENTORY
SCOTT ENVIRONMENTAL TECHNOLOGY INC.	USAF TURBINE ENGINE EMISSIONS INVENTORY CONCENTRATION EDIT REPORT SCOTI

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	RNG VOLTS	S RNG VOLTS	VOL 15	RNG VOLTS	V 0LTS	RNG VOLTS	VOL 15	RNG VOLTS	RNG VOLTS	INPUT REFER	REFER
MODE-POINT : 4-02											
SPANZERO ADJ.	.99 .2402	1.03	\$ +00*	1.03	6100.	. 88	.1045	.89 .1216	1.13 .0050		
TIME : 1344	1.00 .0534	100.00	.6923	100.001	.6230	~	.0738	3 .3031	3 .4717	-	76
PROBE POS.:	*0534		+101.		.6340		1870.	.3084			76.3
9.92 IN.	2720.	2	.7008		.6245		+610.	.3088		7:	75
PRESS .: 24.80 PSIA	.0451	_	.7026		.6263		.0778	.3170		7:-	15
	.0489	•	6969		. 6258		.0784	.3285		7-	76
AVERAGE :	.0516		6669.		.6267		9770.	.3132	.4663		76.1
CONCENTRATION :	2.58 PPMC		AMA 66.69	62.6	62.67 PPMV	52.96	52.98 PPMV	31.39 PPMV	2.07 \$ VOL	3.	.C DEG.F
MODE-POINT : 4-03											
SPANZERO ADJ.	.99 .2410	1.03	9400.	1.04	6100.	88.	1,047	.89 .1223	1.13 .0050		
	1,00 .0371	100.00	.8262	100.00	.7192	~	.0892	3 .3603	M	0.	78
PROBE POS.:	.0387		.8279		.7124		.0896	.3529		0.	78
7.68 IN.	1750.	-	.8223		.7132		.0928	.3638		0.	18
PRESS .: 29.32 PSIA	1040.		.8173		**69		.0922	.3665	.5241	0.	79.3
	50 <b>*</b> 0°	5	.8144		<b>*969</b>		1160.	.3664		0	19.1
AVERAGE :	.0388		.8216		. 7071		1160	.3620	.5256	0.	78.8
CONCENTRATION :	1.94 PPMC		82.16 PPMV	70.7	70.71 PPMV	66.19	66.19 PPMV	36.06 PPMV	2.35	417.7 DEG.F	DEG.

DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE \*\* NOTE \*\*

SET 1628-002-1077 SCOTT ENVIRONMENTAL TECHNOLOGY INC.

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SCOTT ENVIRONMENTAL TECHNOLOGY INC.	TECHNOL	OGY INC				SET 16.	SET 1628-002-1017	11011			2000	REPOR	REPORT DATE 10/21/7	וווווו
CONCENTRATION EDIT REPORT	EPORT	INS INVE	-	EST 6,1	8 3411.0	8	1116 18	150	189 89W	# P63481	LRAFB	LRAFB FIELD TEST 3	FIELD TEST	E ST 3
	RNG	RNG VOLTS	RNG A	VOL TS	N 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RNG VOLTS	* CO-HI -*	-HI -#	# CO-LO -#	-10 -# vol15	* C02*	VOLTS	*- TEMP F* INPUT REFER	REFER
MODE-POINT : 4-04														
SPAN/ZERO ADJ.	66.	.99 .2632	1.08	6500.	1.09	8700.	.86	1011.	.87	.1402	1.14	.0043		
TIME : 1420	1.00	.0059	100.00	.7162	100.00	.6145	2	.0827		.3332	3	.4392	0	11.2
PROBE POS.:		.0019		.7108		.6149		.0803		.3204		.4390	0.1	77.0
PRESS.: 29.66 PSIA		.0031		.7262		.6229		.0819		.3176		n044.	0.	76.8
		1900-		.7138		.6143		.0809		.3154		.4390	0	16.4
PYERAGE :		.0048		.7168		.6164		.0811		.3213		.4390	0	76.9
CONCENTRATION :		-24 PPMC	11.6	71.68 PPHV	61.6	61.64 PPMV	56.3	56.30 PPMV	32.1	32.17 PPMV	1.95	1.95 \$ VOL	•	0E6.F
MODE-POINT : 4-05														
SPANZERO ADJ.	66.	.99 .2640	1.08	6500*	1.09	9700.	.86	.1103	18.	.1408	1.14	.0043		
TIME : 1421	1.00	1.00 .0004	100.00	.7992	100.00	8689.	3	0880.	2	.3294	M	.4718	0.	17.9
PROBE POS.:		0015		.7895		.6864		€689.		.3335		.4692	0.	11.11
23 IN.		.0016		1061.		. 6845		.0847		.3324		.4717	0.	78.8
PRESS .: 28.26 PSIA		*600*		.7956		.6878		• 0836		.3428		.4671	0.0	19.7
		9,00.		1161		0100.		1.00.		21.50			. !	7.61
AVERAGE :		.0035		.7933		. 6860		.0852		.3359		6894.	0.	78.7
CONCENTRATION :	•	-18 PPMC	79.3	79.33 PPMV	68.6	VM44 09.89	60.3	60.33 PPMV	33.5	33.58 PPMV	2.09	2.09 \$ VOL	1394.9 DEG.F	DE6.F

DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE \*\* NOTE \*\*

REPORT DATE 10/27/77
USAF CONTRACT FO8635-77-0216
LRAFB FIELD TEST 3 J59 59# # P63481 SET 1628-002-1077 1116 18 SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
CONCENTRATION EDIT REPORT

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	RNG VOLTS	HC*	RNG VOLTS	X*	RNG VOLTS	VOLTS	RNG	RNG VOLTS	RNG CO	* CO-LO -* RNG VOLTS	* C02*	02* VOLTS	*- TEMP F* INPUT REFER	REFER
MODE-POINT : 5-01														
SPANZERO ADJ.	•120. 66.	.0214	1.08	1900.	1.10	.0078	. 86		.12	.0169	1.14	2400*		
TIME : 1426	10.00 .1298	1298	100.00	11111.	100.001	.1063	2	.2215	-	.2648#	3	.6166	7:	19.4
PROBE POS.:	•	.1236		.1628		.1031		.2522		*2804*		1419.	7:-	18.9
11.69 IN.	•	.1280		.1639		.0975		.3013		.3532*		.6111	7:	19.8
PRESS .: 21.32 PSIA	•	.1245		.1604		0860.		.3204		.5214*		.6108	7:-	78.9
	•	.1316		.1546		.0922		.3359		.6167*		.6070	7	78.2
AVERAGE :		.1275	•	.1625		.0988		.2863		00000	9	.6119	-	19.0
CONCENTRATION :	63.76 PPMC	PPMC	16.25	25 PPHV	8.6	4.88 PPMV	309.7	309.73 PPMV	0.	VM 44 00.	2.1	2.17 \$ VOL	0.	DEG.F
MODE-POINT : 5-02														
SPANZERO ADJ.	.99 .0215	0215	1.08	-00062	1.10	.0078	. 86	.11113	11.	.0110	1.14	.0041		
TIME : 1427	10.00	.1378	100.00	-2309	100.00	.1344	8	.3722	1	.5161*	3	.7448	1	18.2
PROBE POS.:	•	.1391		.2228		.1290		.4016		*2661.		.7424		77.0
9.82 IN.		.1301		.2196		.1299		.4142		*8516*		.7354	1	17.2
PRESS.: .00 PSIA	•	.1389		.2164		.1260		64240		*9616*		.7421	1	17.4
		.1163		.2184		1531		.4368		1.0381*		.7338	1	16.7
	-		•											
CONCENTRATION :	.1324 66.22 PPMC	.1324 PPMC	22.16	.22.16 PPMV	12.9	12.97 PPMV	437.9	.4099 437.92 PPM4		0000°	3.4	3.45 \$ 401	7	77.3

\*\* NOTE \*\* DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE

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SCOTT ENVIRONMENTAL TECHNOLOGY INC.	TECHNOL	OGY INC	· .			SET 16.	SET 1628-002-1077	11077			REPOR	REPORT DATE 10/21/17	11.21111
CONCENTRATION EDIT REPORT	EPORT			TEST 6,	6.TYPE B	8	1116 18	35.	M65 650	# P63481	LRAFB FIELD TEST 3	FIELD TEST 3	E 51 3
	RNG	RNG VOLTS	RNG	NOX	, N	RNG VOLTS	# CO-H1 -#	C0-H1 -*	* CO	RNG VOLTS		*- TEMP F* INPUT REFER	REFER
MODE-POINT : 5-03													!
SPANZERO ADJ.	66.	.99 .0216	1.09	-00062	1.10	.0078	.86	.86 .1115	.71	.0171	1.14 .0041		
TIME : 1429	10.00	10.00 .1603	100.00	.2821	100.00	.1620	3	.4203	-	.7402*	3 .8011	7	78.3
7.64 IN.		.1506		.2729		.1591		.4405		1.0214#	.8012	; ;	78.4
PRESS .: 28.90 PSIA		.1604		.2727		.1569		04570		1.1113*	.7887	7:-	78.0
		.1546		•5689		.1550		0994.		1.18174	6162.	7	18.5
AVERAGE :		.1559		.2747		.1588		.4428		.0000	1161.	-	78.3
CONCENTRATION :	17.9	77.95 PPMC	27.4	47 PPMV	15.8	15.88 PPMV	4694	1469.45 PPMV	0.	.00 PPMV	3.79 \$ VOL	0.	DEG.F
MODE-POINT : 5-04													
SPANZERO ADJ.	66.	.99 .0219	1.09	• 000 •	1.11	8700.	. 85	.1125	.68	.0176	1.15 .0040		
TIME : 1435	10.00	.0755	100.00	.2918	100.00	.1875	3	.2786	-	.2883*	3 .7119	1:-	78.5
PROBE POS.:		.0349		.3324		.2402		.3033		*8072.	.7618		11.5
4.14 IN.		.0435		.3150		.2140		.3033		*1874	1611.	-:-	78.0
PRESS .: 34.59 PSIA		.0438		.3173		.2143		.3069		*8252*	.1319	0	11.1
		7040.		0.11		. 4135		.3159		.8658*	.7417	0	11.6
AVERAGE :		.0476		.3141		.2139		.3010		.0000	.7393	7-	17.8
CONCENTRATION :	23.1	23.79 PPMC	31.4	41 PPHV	21.3	21.39 PPMV	325.9	325.92 PPMV	0.	-00 PPMV	3.45 \$ VOL	0.	DEG.F

\*\* NOTE \*\* DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE

•	SCOTT ENVIRONMENTAL TECHNOLOGY INC.	INC.		SET 1628-002-1077		HEAR CONTRACT CORESCENTION	REPORT DATE 10/27/71
•	CONCENTRATION EDIT REPORT		IEST 6,TYPE B	1116 18	J59 59W # P63481 LRAFB	LRAFB FI	FIELD TEST 3

	RNG	RNG VOLTS	RNG	NOX*	RNG	RNG VOLTS		* CO-HI -*		RNG VOLTS	* C02*	VOLTS	INPUT REFER	£ -
	-		!		!									1
MODE-POINT : 5-05														
SPANZERO ADJ.	1.00	1.00 .3238	1.19	\$600.	1.23	1100.	.81	.81 .1249	.31	.0238	1.18	1.18 .0023		
TIME : 1555	1.00	.1680	100.00	.3710	100.00	.2795	8	.2211	1	*45924	3	.7684	•	0
PROBE POS.:		.1699		.3650		.2708		-2482		.5967*		.7663	•	0
.43 IN.		.1702		.3642		.2718		.2454		*0169*		.7667	:	0
PRESS .: 30.93 PSIA		.1415		.3614		.2669		-2634		.8229*		.7745	-	0
		.1565		.3589		. 2645		.2726		.9051*		.7742	0	-
												1 1 1 1 1		1
AVERAGE :		.1612		.3641		.2707		.2514		0000		.7700	0	-
CONCENTRATION :	8.6	8.06 PPMC	36.4	I PPMV	27.0	27.07 PPMV	270.2	2 PPMV	0.	VMAG DO.	3.6	2 2 VOL	0.	7

DATA MARKED WITH AN ASTERISK (\*) NOT INCLUDED IN AVERAGE \*\* NOTE \*\*

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APPENDIX G
RINGELMANN OPACITY OBSERVATIONS

Ringelmann observations were taken during the J57-59W emission tests by a qualified Air Force observer. The Method 9 procedure was used to make the Ringelmann readings except for two variations. The plume was observed for only two seconds at a point ten meters directly aft of the engines exhaust nozzel. The plume would normally be allowed to build up and a Ringelmann reading is taken of the maximum plume opacity. The turbine engine exhaust plume dissipated very rapidly. In order to measure the maximum plume opacity, readings could only be taken for two-second time periods. In addition, the maximum opacity occurred ten meters aft of exhaust nozzel for all power modes because the plume was detached from the source. The Ringelmann observations were made at this point.

The Ringelmann data is presented in Table 6-3. Atmospheric data was made at the base weather station located 1.5 kilometers from the test site. All readings were taken against a bluish-white sky.

TABLE 6-3. J57-59W OPACITY MEASUREMENTS (RINGELMANN)

## INITIAL DISTRIBUTION

			-
ADTC/CS	1	Det 1 ADTC/TST	1
DDC /TCA	2	1 MSEW	1
HQ AFSC/DL	1	OUSDR&E	1
HQ AFSC/SD	1	USAF Hospital, Wiesbaden	1
HQ USAF/LGEL	1	AFAPL/CC	1
HQ USAF/SGPA	1	AFAPL/SFF	1
SAF/MIQ	1	AFAPL/TBC	1
SAF/OI	1	Naval Air Propulsion Center	1
AFIT/Library	1	NEPSS	1
AFIT/DE	1	HQ TAC/DEEV	1
Federal Laboratory Program	1	HQ TAC/SGP	1
EPA/ORD	1	HQ SAC/DEEV	1
USA Chief, R&D/EQ	1	HQ SAC/SGP	1
OEHL/CC	1	HQ USAFE/DEEV	1
USN Chief, R&D/EQ	1	HQ USAFE/SGP	1
AFCEC/DEV	1	Scott Environmental Technolog	Jy1
USAFESAM/EDE	2	Det 1 ADTC/ECA	6
AFISC	2	EPA/RTP	1
AUL/LSE	1	NGB/DEM	2
HQ USAFA/Library	1	189 MAF/CC	1